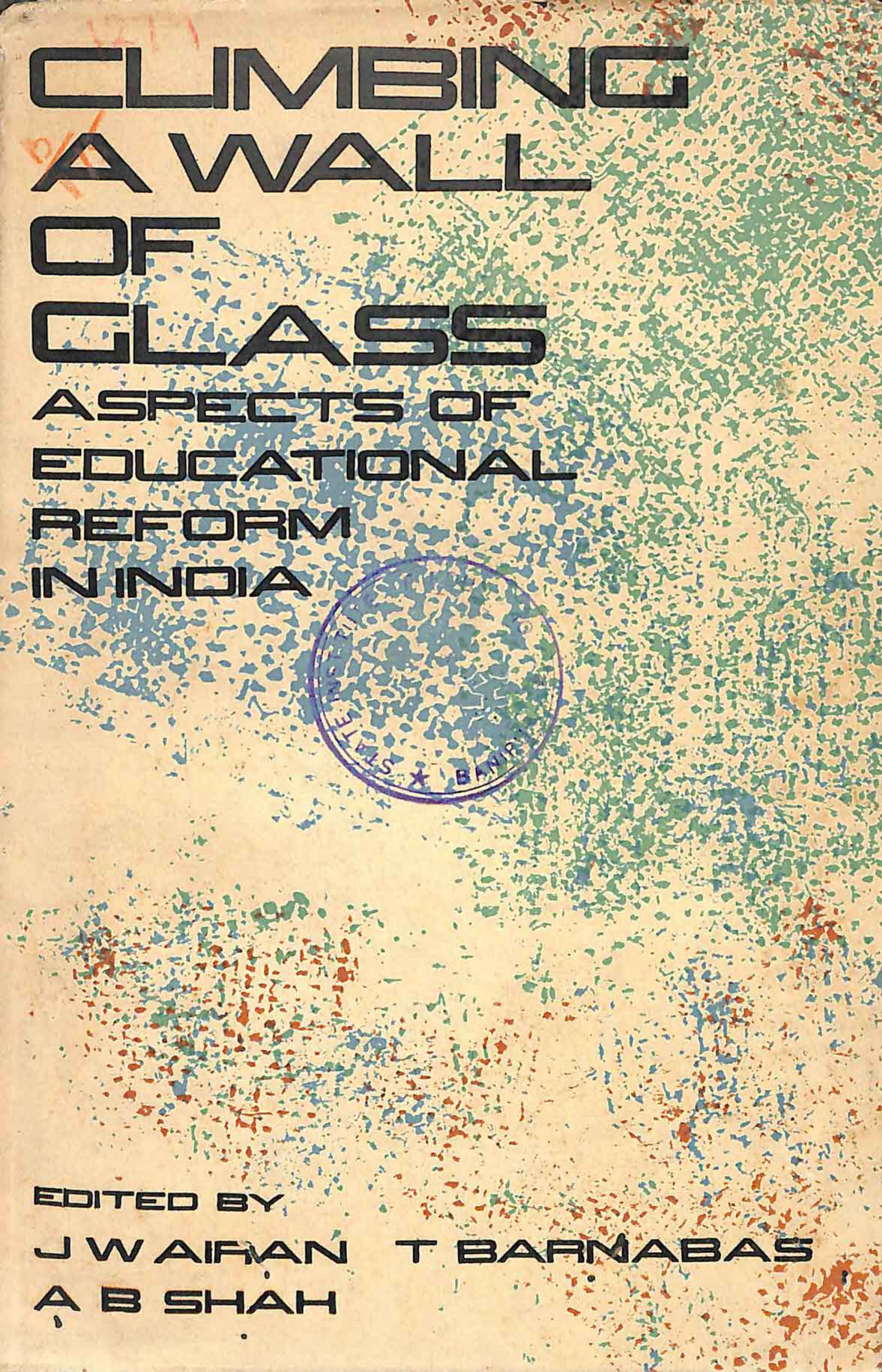

CLIMBING A WALL OF GLASS

ASPECTS OF EDUCATIONAL REFORM IN INDIA

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EDITED BY

J W AIRAN T BARNABAS

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CONTRIBUTORS

A. B. Shah is Executive Secretary of the Indian Committee for Cultural Freedom, and author of *Scientific Method.* Prior to joining the I.C.C.F. he had taught Mathematics and Statistics for over twenty years in the Universities of Poona and Bombay.

Frank T. Wilson is Secretary for Education, Commission on Ecumenical Mission and Relations of the United Presbyterian Church in the U.S.A. A graduate of Lincoln University and the Theological Seminary, he earned the Master of Arts and the Doctorate of Education degrees from the Columbia University in 1932 and 1937 respectively. His association with India has been long, and he has conducted educational surveys in most of the developing countries.

J. W. Airan is Professor of Biochemistry and Principal of Wilson College, Bombay. His field of specialization is chromatography.

J. Edward Dirks is Director of Graduate Studies in Religion at Yale University. His fields of specialization include contemporary analytical philosophy, American philosophy and religious thought, and the philosophy of religion. He is the founder of *The Christian Scholar,* a journal dealing with theology and academic disciplines.

P. N. Mathur is Secretary of the Banasthali Vidyapith, Banasthali, Rajasthan.

Amlan Datta is Reader in Economics in Calcutta University, and joint Editor of *Quest.*

T. Barnabas is Professor of Chemistry and Principal of Ahmednagar College, Ahmednagar.

S. K. Hulbe is Professor of Economics and Director of the Rural Life Development and Research Project in Ahmednagar College, Ahmednagar.

H. J. Taylor was till recently Vice-Chancellor of Gauhati University. Earlier, he was for nearly twenty-seven years Professor of Physics at Wilson College, Bombay, and then Principal of Scottish Church College, Calcutta. He has made a special study of Examinations and published his findings through a number of papers and reports.

S. P. Aiyar is Reader in Public Administration in Bombay University and has published *Federalism and Social Change.*

D. A. Dabholkar is Professor of Economics and Principal of Chintamanrao College of Commerce, Sangli, Maharashtra.

Daya Krishna is Professor of Philosophy in Rajasthan University and a contributory editor of *Diogenes,* and author of *Considerations Towards a Theory of Social Change.*

Duncan Fraser is a graduate of Aberdeen University. He has served as Principal of Wilson High School, Bombay, and later as Professor of Chemistry, Wilson College, Bombay.

G. C. Pande is Professor of History and Indian Culture in Rajasthan University.

INTRODUCTION

A UNIVERSITY degree in education does not necessarily entitle a man to write a discourse on what constitutes education in a contemporary situation any more than a university degree in science makes its holder a scientist. And a man not well-versed in natural sciences or, for that matter, in humanities or social sciences, dare not write on these matters either with a view to bringing to the notice of others what must go into the teaching of these subjects to make that teaching worth while, or with a view to challenging the philosophy that underlies the growth of these disciplines. With education, it is different, and that is where its strength as well as its weakness lies. Education concerns all, or at least ought to concern all. It is something that is left in the life and conduct of a man who has been even partially through the process of education, after he has forgotten most of the details which he had learnt during that process. Whatever the subject or subjects he has formally learnt, it is customary to say that he *received education*, that he is an educated person. This view itself is so vital for this important human activity, or, one may say, adventure, that questions have been raised whether those who impart courses in formal education are educators or instructors, and whether it can be said that those who teach do really *educate* students. Is not education something that a young person gives to himself during his years of learning in institutions of learning? Education is thus what makes *men*, and therefore all the interest that society and therefore individual members of society take in the administration, content, and effectiveness of formal education stems from a conscious or unconscious acceptance on the part of every responsible citizen that education is a justifiable investment in man. It is therefore understandable if an individual, whether he has received a university diploma in education or not, feels prompted to express his views on education. And he is entitled to do so. It then remains the responsibility of those whom society has specially charged with the task of organizing education to sift from the views expressed those requiring further study through channels which seem best to them and to their Government. This the Government normally does through its special committees or commissions. Private citizens do this through the organization of discussion groups and seminars. Private groups of citizens can afford to address themselves only to certain limited aspects of education whereas a government can, if it so wishes, bring a large number of aspects under scrutiny at one and the same time.

Even before India became independent, the Government sought guidance from individuals and committees and commissions they had confidence in. It would be unfair not to appreciate this valuable approach solely on the ground that this was the work of an alien power and that their search for the right type of education which should be imparted to Indians was guided by considerations which move a foreign power to consolidate its political hold on unwilling subjects. Wood's Despatch, Macaulay's Minutes, the Sadler Commission report do disclose a deep concern for education as such. Governments and political parties in power everywhere in the world have left their impress on the educational systems and planning in their own countries for the simple reason that they had and have a philosophy of their own on the strength of which they occupied seats of power. If there are men enough in *society* who can make education a concern that makes them restless, and who have the courage of their convictions, and the wisdom to share these with the rest, any possible autocratic handling of education by a government will, to that extent, be modified. It is this conviction which led us to plan this symposium.

Since Indian Independence in 1947, the Government have evinced a genuine and deep concern for the proper development of education in India. The Congress party since Independence is wedded to considerations which arise as a result of the leadership which the party (and the nation) had in the person and teaching of Mahatma Gandhi; his views on education have been interpreted differently by different groups of people in this country as well as abroad. This is understandable since it is generally conceded that the ruling party in a country should have a say in matters of educational policy. Thus we have a scheme of Basic Education in India which has its own native colour and will not fit into concepts of basic education as is universally understood. The bias introduced in the multipurpose schools for the same reason merely diluted the academic programme without giving adequate vocational training. Technical schools stand unrelated to any clear-cut programme of technical training beyond the school stage; one finds pupils from these schools queuing up for admission to science courses in colleges of Arts and Science. The programme of Rural Education has yet to catch the imagination both of the State Government and of the public. The Sri Prakasa Report on religious and moral instruction in schools and colleges, as well as the Radhakrishnan Report on higher education, and the Mudaliar Report on Secondary education, remained as fine academic documents, each by itself, and hence capable only of, at the most, partial implementation.

The appointment of the present Commission on Education by the Indian Parliament is a significant landmark in the history of education in India for various reasons. It is commissioned to review the educational situation *as a whole* and to make recommendations accordingly. We felt that as citizens it was our duty to help the Commission as much as it lies in our power to do so. The Commission has by a public announcement solicited such help. We therefore approached academic men whom we know personally to have a deep interest in education, especially Indian Education. There are four non-Indians among the contributors. One of them, Dr H. J. Taylor, who was till recently Vice-Chancellor of Gauhati University and earlier on the staff of Wilson College for twenty-seven years as Professor of Physics, has made a special study of the examination system and practices operating in India. He writes on that subject in this symposium. Dr Frank T. Wilson, Education Secretary of the United Presbyterian Church in the U.S.A., while in India in 1962, carried out a survey of church-related schools and colleges; he has carried out similar surveys in most of the countries of the world in Africa and South America, Jamaica, Thailand. and is at present engaged in the same task in Japan and South Korea. His insistence on 'purpose' and on academic excellence not unrelated to the national needs and national goals in these surveys will be found clearly reflected in the chapter contributed by him. Dr J. Edward Dirks of the Yale University spent one year recently (1963-64) as a Fulbright Professor at the Madras Christian College, Tambaram, and has helped the faculty to carry out a 'self-study' which resulted in a valuable publication, 'Rethinking Our Role as a College'. Dr Dirks displayed great enthusiasm for the developing situation in this country and was able to identify certain crucial problems that higher education is facing in India. Both Dr Wilson and Dr Dirks very kindly agreed to write for this volume and to record their own impressions of the problems that matter, or should matter, in our situation.

Dr Duncan Fraser from Scotland, who has been in close and active contact with both secondary and college education in India for the last thirty years, and is currently Professor of Chemistry in Wilson College, Bombay, makes a plea for clarity as regards our aims in the teaching of science. Is it to prepare 'competent hacks' or to produce 'scientists'? Appreciating the fact that more and more of our promising young people are being drawn to the study of science, are we making the study of science deep enough as well as *delightful?* How can the teaching of science be so organized that it would arouse *interest* in science itself as well as in its applications?

Shri P. N. Mathur of the Banasthali Ashram, Rajasthan, has identified himself with the excellent work that is being done in that institution where a novel and exciting approach to education at all stages is being developed. When Shri Mathur writes on problems relating to culture and education he is on his own ground. He writes from the depth of his conviction. The balanced view and gentle persuasion which characterize his contribution will, we hope, go a long way towards contributing to this debate.

Professor Amlan Datta of the Department of Economics, University of Calcutta, is one of our best known intellectuals. His cautious and sincere approach to the vexed question of the medium of instruction merits careful consideration. No one will deny the place of the mother-tongue in the formal education of young people, and yet the fact of our involvement in the world scene and the fact of ours being a developing country do call for a realistic assessment of this question. The language of instruction is vital in the assimilation as well as in the dissemination of knowledge within the country; but in a modern world it has also an international significance.

Academic freedom is the very essence of dynamism that must characterize the educational programme of any country. There is a possibility of understanding the implications at this question purely in a theoretical way, and in a very 'academic' manner; and that could possibly be done by an experienced person, such as the Head of a university department or the Principal of a college. Instead, it is much better to have a comparatively young university teacher write about it so that the reader, while being introduced to the grandeur of this concept, may also know its practical limitations. This is a vital question especially when a country such as ours, which has just emerged as a free nation, has innumerable problems on hand and has agreed that it can tackle these problems only through 'planning'. There is indeed a very thin dividing line between 'planning' and a 'totalitarian' approach! Education at no stage can escape being included in areas which in the larger interest of the nation must come under planning. Dr S. P. Aiyar of the University of Bombay has, on earlier occasions, devoted much attention to this problem with certain concrete suggestions, and hence we requested him to contribute a chapter on Academic Freedom.

Closely allied with this is the problem of relationship between the State and the University. All our universities and colleges come into existence as a result of an Act of Legislature. The non-recurring and recurring expenditures are definitely beyond the reach of private bodies which manage colleges. Similarly, the explosion of knowledge and the growing number of students who seek admission to colleges and universities create problems which make the entry of the state into the working of colleges and universities almost inevitable. With the grant of funds would naturally come governmental control, and the line dividing institutional control and juridical control over education has almost vanished. And yet, education being what it is, namely, a great adventure of the human mind, autonomy is essential for its healthy growth, autonomy for universities and even for colleges within the universities. Dr G. C. Pande, Professor of History and Indian Culture at the Rajasthan University, has dealt with this issue in his contribution *The State and Higher Education.*

Science is the most impressive phenomenon of this century. Training in science seems to be tending to eclipse training in the humanities, and the social sciences which partake of the substance of the humanities and the methods of science are adversely affecting the number of students who would normally have opted for humanities. What are the claims of these groups of subjects on the individuals seeking higher education and on the society which must in the final analysis express itself on this issue? Dr Daya Krishna, Professor of Philosophy at Rajasthan University, has discussed this question in great detail. Is science the only tool for the intellectual growth of the modern student? What happens to the culture of his land? Has it any contribution to make in promoting and sustaining the intellectual development of a people?

Principal Dabholkar, Commerce College, Sangli, has developed the thesis that there should be a 'grand alliance of the society and the university teacher', which implies that each carefully study and recognize the obligations owed to the other in all fields of mutual interest.

Ahmednagar College, Ahmednagar, has for some time been actively engaged in rural work involving a fairly large student body in that activity. Their publication, *The New Horizons,* is illustrative of the impact they have made in this area. The chapter on *The University and the Rural Community* is thus an account of certain definite achievements, and hence may provide points for useful discussions.

The chapter on *Possible Reorganization of Higher Education* attempts to stress some realities of the situation in terms of the national goals emerging from the Indian Constitution and the aspirations of 'new' students all over the country; at the same time, it tries to locate where, in the whole structure of education in the country, international standards must prevail.

There is also a plea for stating in clear terms the purposes and aims of college education, and, therefore, for the recognition of two independent—and yet vaguely related—activities of what is currently called the 'university'. It attempts to highlight the emergence of what is coming to be known as the 'multiversity', a rightful successor to the 'university' of a bygone age.

The very first chapter contains an analysis of the contemporary situation in the world context without losing sight of the aspirations and demands of the people of the country. While stressing the inadequacy of the funds which the Planning Commission makes available for Education, the author pleads with educationists themselves to understand their role in education 'with clarity and articulate it without fear or ambiguity'.

When we invited these contributions we requested the contributors to propound their *own views*. We have therefore not modified their statements. This volume then contains views of individual thinkers. We commend them to the reader for careful study, and to the Education Commission and other groups of policy-makers for their critical consideration.

A word may be said in explanation of the choice of title for this book. The task of educational reconstruction in this country, like that of reconstruction in other spheres of life, is as difficult as climbing a wall of glass. However, it is perennially exciting. Unless the nation learns to look upon this task as posing not merely a problem but also as offering a challenge and an opportunity, it cannot hope to succeed. The stakes are great, but so also are the rewards.

EDUCATION—ITS ROLE AND PROBLEMS

A. B. Shah

BEFORE attempting to identify the role of education in a developing society it is necessary to state in brief the problems characterizing such a society and the great but limited potentialities of education in relation to problems of development. In the absence of a realization of what education can possibly accomplish and what it cannot do, it is likely that we assign to it unrealistic goals and then, on finding that these goals cannot be reached as per plan, blame education itself as a mere luxury or an ornament for an affluent society. This is likely to happen in a country in which education has come to be looked upon as the master key to everything that one considers worthy of pursuit in life. For instance, ever since the time of Mahatma Gandhi, criticism has periodically been voiced against the system of Western education that was introduced by the British in this country more than a hundred years ago. It was said that Western education made its recipients unfit for the tasks of national reconstruction. Not only were they inadequately equipped to solve the problems of the country in different fields of national life, but were also alienated from their own culture and made strangers in their own land. Western education, it was further alleged, rendered the student incapable of even earning his livelihood. All in all, the type of education that had developed in this country during the preceding century was condemned as utterly unsuitable to the genius and needs of a resurgent nation like India.

Now it must be conceded that this criticism was not altogether incorrect. It is true that students who took Western education in India felt, in a sense, uprooted from their native surroundings. It is also true that the average graduate of an Indian university has found it difficult to get suitable employment over the last so many years. However, if one looks at the situation a little beneath the surface, one would see that this is not the fault of Western education itself. The inability of the Indian university student to feel at home in his society, as also his failure to secure a satisfactory job, results from the Indian situation. In an underdeveloped economy it is not easy to absorb more than a limited number of university graduates unless they have gone through a course of technical training. Nor is it easy for one who has experienced the sense of liberation that life even in an Indian university gives to continue the organic relationship he had with his traditional indigenous culture. In this sense, Western education has, as a matter of fact, acted as a source of discontent with the existing social and cultural life of this country and has thereby provided the much-needed motivation for its transformation from a traditional into a modern society.

That this has been the most important role of higher education in India is evidenced by the fact that almost all the movements for the modernization of Indian society have originated in the educated middle class. Whether it was the nineteenth-century renaissance symbolized by the work of men like Raja Rammohan Roy, Gopal Ganesh Agarkar and Narmad, or movements for political independence and economic development represented by Tilak, Gandhi, and Nehru—in all these cases, the inspiration and leadership have both been provided by men who had, through the window of Western education, a vision of a better life that their countrymen too could create. The programmes of modernization in the fields of economy, social relations, and cultural life undertaken by the Government and a number of voluntary agencies during the period following Independence are thus a continuation of the process which Western education initiated in this country nearly a hundred and fifty years ago. What has happened during the last decade and a half is merely that this process has now gathered sufficient momentum to make its impact on the life and modes of thinking of the large mass of people, who till recently were merely passive observers of something that they could not comprehend, still less control.

It is against this background that the role of education in a developing society has to be understood. A developing society is characterized by certain features, not only economic, which distinguish it from what is known as an advanced society. As Adam Curle observes,[1] the underdeveloped countries 'are not simply less prosperous models of the wealthy nations; for, there are embeded in their structure factors which make for inertia and even retrogression'. These factors are both economic and socio-cultural. A large proportion—varying from 50 per cent to 80 per cent or more—of the population of underdeveloped countries is engaged in agriculture. The infrastructure of the economy is in a rudimentary stage and the number of professionally trained persons, such as doctors, engineers, teachers, and the like, is extremely low. For example, the number of doctors in India is 1 per 6,300 of the population and that of dentists is 1 per 3,00,000 of the population. The corresponding figures for the United Kingdom are 1 per 1,000 and 1 per 2,700. Not only that; in most economically mature countries the technical professions constitute a broad-based pyramid with a small number of the most highly trained persons at the top and a proportionately large number of persons at the middle level of technical work. In underdeveloped countries the number of middle level technical personnel is proportionately small. This results in the highly trained men being unable to perform their own specialized work to the same extent to which their counterparts in advanced countries can.

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[1] *The Role of Education in Developing Societies* (Oxford University Press, 1961), pp. 5-6.

Secondly, the attitudes and behaviour patterns governing intragroup and intergroup relations in an underdeveloped society are incompatible with the needs of a modern society. These societies are mostly based on inequalities of wealth, opportunity, power, and education, which separate one group from another and also differentiate the society in various strata between which there is little mobility. The educated middle class which has to live on the strength of its training and skills rather than on that of caste or family influence is comparatively small. Consequently, the national administration remains inherently weak. What governs men's attitudes to problems of public life are sub-national loyalties, either to region or to caste or even to a family group. These militate against the development of an efficient and impersonal administration.

Another cultural characteristic of an underdeveloped society consists in the common man's attitude to the physical and human world. He looks upon it as something given, something which he cannot comprehend, let alone bring under his control and modify to make it a more suitable instrument for the realization of his goals. It is the social and cultural elements of an underdeveloped society, more than its poverty or paucity of material resources, which keep it underdeveloped. An underdeveloped society is poor primarily because it does not have the human resources to carry out its transformation into a modern developed society. There is very little of the critical spirit amongst its members, and very little of the capacity and the habit to look beyond one's immediate group and take a larger view of the problems which it faces. As a result, even when economic assistance in a large measure is available for its development it is generally found that there is a limit beyond which it cannot be fruitfully utilized by such a society. The experience of the working of co-operative societies in India and that of shortfalls in the use of foreign assistance points to such a situation. What is true of India is true perhaps to a greater extent of most of the other developing societies.

If education is to play a significant role in such a society, it has to assist in the creation of new values and attitudes in place of the old so that the obstacles mentioned above in the path of modernization may be removed. It is not enough to emphasize the need of a larger number of scientists, engineers, doctors, and agriculturists. What is necessary is to raise the quality of the millions of ordinary men and women on whose incentive and industry the success of all developmental efforts, especially in a democracy, depends. In other words, in defining the role of education in a developing society one has to take into account not merely the needs of a growing economy but also those of a new culture that would reflect the spirit of a dynamic, liberal, and growth-oriented society.

Looked at in this way, the role of education in a developing society appears to be more complex and more sophisticated today than in the preceding century in the developing societies of the West, or in the advanced nations of the contemporary world. It is not enough that education should discharge its three classical functions, which may briefly be formulated as follows:

1. to socialize the individual by making him develop roots in the traditions and attitudes of the society whose member he is;
2. to equip him with the basic information and intellectual tools that will enable him to find his way through the plethora of experience that life is; and
3. to train him for earning a livelihood in conformity with the norms of economic conduct accepted by the community.

These objectives of education are universal in the sense that they are common to all societies, democratic or totalitarian, advanced or underdeveloped, ancient or modern. What distinguishes education in an underdeveloped society in the modern age is the system of values that it affirms as a community and the specific human environment in which it seeks to realize them. India, for instance, has accepted *in principle* and embodied in its Constitution the values of a modern secular democracy, in which social and economic justice and equality of opportunity will be guaranteed to all its members. These values have to be realized in a social and economic context which requires that a process which took nearly three hundred years in the West should be telescoped into about one-tenth of that period. This context and these values distinguish the role of education in India from its role in a society like the Russian or the American. Unlike the former, India is committed to certain basic human values. At the same time, unlike America, she has neither the resources nor the social and cultural tradition to ensure the survival of these values without special effort, especially on the part of those who are engaged in education. Education in India has thus to function in a situation in which neither the cultural concomitants of a modern democracy nor the economic resources for its efficient working are yet available. Consequently, both the educational system and the men who run it have a unique role to play in the modernization of the Indian society.

For instance, the first of the three objectives of education listed above has to be modified in the Indian context. It is neither possible nor desirable for education in India to enable the individual to 'develop roots in the tradition and attitudes of the society whose member he is'. The dominant Indian tradition and the attitude to life that it sanctifies are, by and large, antithetical to the emergence of a modern society. What the student has, therefore, to assimilate from his education is the spirit of critical inquiry and the habit of forming an independent judgment in the light of the value commitment referred to above. He has to learn how to bring his knowledge and skills to bear upon the problems of the society which he, as an educated man, will have to help in modernizing. He has, in other words, to learn how to transcend narrow, sectarian, or parochial and other-wordly loyalties, to which his tradition inclines him, and to look upon himself as a member of a larger community that is dedicated to the pursuit of certain universal, secular values such as freedom, equality, and growing economic security. These he can achieve only if he is able to co-operate with his fellowmen in the pursuit of a human rather than divine goal. He has therefore to develop a sense of civic concern and recognize that between him and the ultimate value that he accepts for himself, there are a host of intermediate groups and institutions which both are necessary for his self-development and have a claim on his allegiance and support. In other words, he has to look upon himself as a member of each of a hierarchy of human groups such as the family, the region, the nation, and, if one may say so without sounding platitudinous, the world.

The role of education in India outlined above and the context in which it has to be performed point to certain problems which have yet to receive the attention they deserve. Only a few of them are considered here.

The first problem that strikes an observer of the Indian educational scene consists in the need to strike a balance between the claims of different sectors of education. Since even on the most optimistic estimate resources for education are bound to be inadequate for a long time to come, it is necessary that they should be put to optimum use from the standpoint of the national goals. In other words, the development of education at different stages and of different types has to be planned comprehensively in order that wastage may be avoided and unnecessary strains could be foreseen and prevented. To take only one example from the Indian experience during the last fifteen years, whereas the expansion of school education was allowed to take place without practically any check, no anticipatory provision was made for a corresponding expansion of university education. The result was an unexpected pressure on institutions of higher education and a consequent lowering of the standards of discipline and the already low standards of academic performance in relation to the needs of the country.

This leads us to the second problem of education in a developing society—namely, the alleged conflict between the demands of quality and the claims of quantity. It is sometimes argued that admissions to the university should be restricted to those who secure a certain minimum percentage of marks at the School Leaving Examination. The argument is supported by a reference to the large expansion in the university population during the decade 1951-61, and the large percentage of failures at most of the university examinations. However, if one looks at our university education a little more closely, one finds that the real problem is not that of numbers. It is, rather, that of providing adequate facilities for good education to growing numbers of young men and women from social groups which for ages have been denied all opportunity of participating in the cultural heritage of the land. For the first time in India's history it has now become possible, however inadequately, for entire sections of our society to come out of the backwaters of culture to which poverty and the Hindu social structure had till recently condemned them. Given certain conditions, this mass upsurge can prove a tremendous force in favour of the economic and cultural modernization of the Indian society. What is necessary, therefore, is not to put restrictions on the spread of higher education but to make it more meaningful and to improve its quality to the maximum extent possible in the years to come. One implication of this position would be that education in India should combine the liberal and professional aspects into a blend that will give the new student both a vision of a better society and also the intellectual and attitudinal equipment to work for its birth. Thus the separation between liberal and professional education has to be ended in the interests of what, for want of a better word, may be called 'General Education' in the light of the Indian situation. In other words, while emphasizing the need for a larger number of technically trained persons to man India's growing industries and public services, it is also necessary to ensure that they will develop an appreciation of the human values for the sake of which the entire national effort is undertaken. Unless this is done, we might very well be faced with a situation in which the scientist and the technician are no better than what Ortega y Gasset calls 'educated barbarians'. Similarly, if the students of humanities and social sciences do not go through a broad-based but rigorous training in the methodology and fundamental truths of modern science, they are likely to develop into pale imitations of the gentleman of the Greek or the Victorian Age. In either case, the damage to the nation will be irremediable.

The third problem of education in India concerns the provision of a growing number of trained teachers, through whom alone the developmental objectives of education can be realized. What is necessary here is to broaden our conception of the training of teachers. It is not enough to train them as efficient conveyors of knowledge and skills. It is also necessary that they should be able to impart to their students the types of attitude and a sense of values which alone can sustain a modern democratic society. In other words, the training of a teacher, like the training of any other person involved in the implementation of plans of development, should equip him to see his work as a part, however humble, of the integrated national undertaking. Unless he is able to visualize this undertaking as a whole, and shares the spirit of adventure behind it and the sense of commitment to its ultimate success, he will fail to create the type of youth through whose effort alone the nation can develop.

In an advanced society it is generally not necessary to emphasize explicitly these aspects either of the nature of education or the type of teacher-training that it provides. These are, so to say, part of the bone and blood of such a society and may, therefore, be taken for granted. In an underdeveloped society, on the other hand, it is necessary to make a conscious and planned effort to build into the educational system certain values and mechanisms to ensure that it will have the requisite degree of efficiency. It is also necessary constantly to keep in view that the efficiency of the system has to be twofold: it has to prepare students not merely for life and for earning a livelihood but also for changing their environment along the lines visualized in advance. This consideration makes the role of the teacher a crucial one in all programmes of national development.

The fourth problem of education in a developing society is posed by the unsuitability of its inherited machinery of educational administration. This machinery, in India at least, was created primarily as a control mechanism by an alien Government. It has now to play a different role, of releasing initiative and the spirit of experimentation rather than of curbing them in the interests of political and social stability. At the same time, it has to ensure that the process of change does not claim too heavy a toll because of a lack of guidance or of provision of adequate facilities. In other words, like the state in a democracy, educational administration in a developing society, has to function as an 'operational critic' of educational institutions. It has to curb opportunism and the exploitation based on it, without, at the same time, inhibiting initiative and experimentation. The educational administrator has, therefore, to undergo the same type of reorientation as the rest of the bureaucracy if the state is to function as an instrument of freedom and progress.

One implication of this requirement is that educational administration will have not merely to be reorientated but also to be decentralized to a considerable extent. The conflict between the claims of the States and the Centre over their respective jurisdictions in the field of education has to be resolved in the light of these considerations. What is necessary is that *neither the States nor the Centre should exercise more than the minimum control* over education; rather, we should have autonomous agencies, immune from the fads and fancies of the ministers in power, and capable of looking after educational growth with competence and imagination. It is not possible to work out here the details of this suggestion; suffice it to say that something corresponding to the development of the University Grants Commission during recent years will have to be planned at different levels and for different sectors of education.

Another point, which should not need any detailed treatment, concerns the provision of finance for education in a developing society. It is all too easily assumed that education can safely be given a fairly low priority in the national plans. It is also sometimes argued by those who claim to understand both education and finance that what educationists should state is not the percentage of the national income but the total amount that they consider necessary for a sound system of education. It seems to me that both these positions are unhelpful. That education should receive the highest priority after defence and food still needs to be appreciated in India. At the same time, it is also necessary to keep in mind the limitations imposed on educational development by the paucity of human, no less than material, resources. It would be utopian, even positively harmful, to prepare plans of educational development for which the requisite personnel or finance is not likely to be available at all. The Radhakrishnan Commission did just this, with the consequence that most of the valuable suggestions it made remained on paper, though they were enthusiastically welcomed by those who appointed the Commission. It is, therefore, necessary for educationists to have a realistic view of the maximum resources that are likely to be available for educational programmes just as it is necessary for the Planners to realize the seminal role of education in achieving even the rather narrow objective of economic growth. The provision for education in the Fourth Five Year Plan, which is Rs. 1,400 crore out of a total outlay of about

Rs. 22,000 crore, appears to be highly inadequate from this standpoint. Even after making allowance for the educational programmes costing about Rs. 400 crore to be undertaken by other ministries, one cannot feel that the Planning Commission has fully realized the role of education in a developing society. It should not need much argument to see that less than 10 per cent of the nation's total investment is not a satisfactory proportion of national resources to be devoted to education. Unfortunately, educationists themselves do not seem to be very much perturbed over this situation. Which brings one to the melancholy conclusion that the first prerequisite for education to play its role satisfactorily in a developing society is for educationists to understand it with clarity and to articulate it without fear or ambiguity.

However, provision of finance is not enough. More than finance, what is sadly lacking in Indian education is the qualities of the mind indispensable for a system of education that can function in the interest of ever-rising standards of excellence and does not remain the monopoly of a privileged few. Such a system presupposes that those who work in it have the courage of their conviction and that the larger community outside supports them when academic values are threatened by populist pressures or government interference. Unfortunately, neither of these conditions is at present satisfied in India. The recent experience of the University of Bombay, when it tried to reform education in its Arts and Social Sciences Faculty, is disturbing in this respect. It is not necessary to go into a history of the University's ordeal during the last three years.[2] What is

[2] Cf. A. B. Shah, 'University Autonomy on Test in Bombay', *The Statesman*, Delhi, 21 September 1964.

relevant here is the simple fact that the University's efforts to improve the teaching of certain subjects and, at the same time, to provide sound instruction at a concessional cost to those of its students who could not take to higher education as a full-time pursuit, were opposed both by the ruling party and its government. The final outcome of the controversy has been that university autonomy has been seriously compromised in Maharashtra. While the University's academic objective has been partly realized, in the sense that full-time students and working students will not be mixed up in common classes, its social idealism has been defeated by the pressures of the market-place. They have compelled the University to offer evening courses to working students *of the same duration* as for full-time students even though the former category of students obviously cannot spare half as much time for self-study as the full-time students can. This will harm the long-term interests of the weaker sections of the city's population by ensuring that the higher education they receive will necessarily be of a lower standard than what students who can afford to study full-time will.

The experience of Bombay University emphasizes the need of concerted effort on the part of Indian educators in order that they are left free to discharge their obligations to the nation in a manner that *they* consider the best without outside pressure from the government or political parties. The University Grants Commission and the Inter-University Board have a great and inescapable role to play here. If, for any reason whatever, either of finance or of the love of positions, these bodies fail to discharge their duty as the guardian of academic freedom, the future of Indian education is bleak indeed.

AIMS AND OBJECTIVES OF LIBERAL EDUCATION IN A DEVELOPING COUNTRY

Frank T. Wilson

IN ALL parts of the world today the thrust of the human mind is taking men beyond the narrow boundaries of nation, race, or class, and requiring every human being to live responsibly within the context of global relationships. Nevertheless, the immediate sphere of one's activity is the village, the city, the state, and the nation. It is in these specific locations that we are born and live and work and make our contribution to the growth of ideas, to the pursuit of values, and to the development of social, economic, political, and cultural institutions.

Whether from the worldwide perspective or from the limited view of rural or urban existence in a seething culture, it is the ideas, intentions, attitudes, and aspirations of the people that give impetus to individual inventiveness and specific quality to broad social achievement. From the early stages of relatively simple and direct association within the intimate confines of family, village, or small town, to the more complex, extensive, and impersonal conditions of a great nation in transition, there is a distinguishable character or mode of life which reflects the quality of mind and spirit by which the hopes of men are aroused and through which the shared efforts of men find direction and focus.

It is in this respect that it may be said that 'institutions are the lengthened shadows of men'. This is not a statement in support of the 'strong man' theory of history; nor is it intended to stress the importance of the leadership role in the accomplishment of common national objectives. Rather, it is designed to emphasize the motive force and the directive power of the combined ideas and yearnings of the rank and file of human beings in any locality striving toward goals that will bring fullness of life to the whole people.

The words of a modern writer call attention to this inner dynamism seeking to find expression through the outward forms which evolve steadily or, perhaps, erupt suddenly into the style of life or personality of an entire nation. This author says, 'Tell me what is the myth within history that is seeking to express itself through the life of a nation and I will tell you what that nation *is* and *may become*.' This is profound testimony to the fact that in all periods of human history there are movements of thought and desire and common purpose which will energize the actions of men in fashioning a nation after the deepest promptings of the human spirit and the finest insights of the mind.

The past half century has witnessed drastic changes from some of the old static, stultifying, and sterile forms of life into the beginnings of structures whose vitality and potential exceed man's readiness to harness these restless energies for building a really good society. This is the avowed intention of all so-called developing countries. It has been the historic slogan of countries which consider themselves far travelled on the road of development. Whatever differences in approaches to the achievement of full selfhood, or however the pace of accomplishment in various countries may be affected by internal impediments and external hindrances, there is undiminished determination to uproot the impediments and break through the hindrances and move resolutely into full possession of a long-delayed heritage.

Wherever man is found there is evidence of his unwillingness to eke out a precarious existence under the strictures of oppression and exploitation. Man is not willing to be ignored and pushed aside, nor to live under the repressive demands of custom and tradition. Passions are stirred and actions are stimulated by visions of the unfulfilled potential in every living creature. The developing countries have the singular advantage of avoiding some of the errors which some of the longer established countries are finding so difficult to correct. A developing country is less bound by the rigidities of the past and is in a position to exercise choice regarding the values, objectives, and the way of life toward which the pooled resources of the nation should be directed.

There is a sense in which every developing country is a 'new emerging force' within the family of nations. At every turn it becomes clear that the break from the past is no automatic panacea for the ills of today and tomorrow. The developing country may be the victim of tradition or greed, or it may be torn by new outbursts of old antagonisms. Hostilities may be more carefully disguised but no less vicious in their harmful effects. The power struggle may ostensibly be launched in the interest of 'all the people' but is in truth divisive in provoking sectional or communal conflict.

Within this setting the University serves the triple function of:

1. custodian of the most worthy creations of the minds of men,
2. critic of error and false values,
3. cultivator of the latent intellectual, moral, and spiritual powers of every on-coming generation; guide and defender (of all those who have the capacity and the desire to join with their fellowmen in creating a society in which the talents and energies) of an increasing number of competent men and women whose talents and energies will be devoted to establishing the dignity and worth of man in a truly free society.

The University is thus the greatest asset of the nation. Its role is to lead and not to follow. It stands as interpreter of truth and not as 'echo' of the historic follies and foibles of past régimes. It helps to set the sights of a whole people on undertakings which will serve the common good. It is the foe of bigotry, the enemy of narrow prejudice, the exponent of freedom, and the courageous advocate of the rights of man. At its best the University refreshes the hopes of this generation by announcing the possibilities of the day that is dawning for all segments of the society. It goes beyond mere announcement and becomes seriously engaged in preparing the able youth of the country to exercise a creative and productive role in the advancing era.

This reorienting of minds and redirection of effort can take place only under conditions where there is free interplay of thought, open inquiry into ideas, interaction between young and old, mutually respectful partnership between mature lecturer and maturing student. It is not sufficient that such conditions obtain within a closed community of privileged individuals. The University itself must be an open society in which the qualifications for admittance and participation are not determined by status or sex or class or any artificial 'prestige symbols' by which human beings have been accepted or rejected. Liberal education occurs in a liberated community. It is both the means and the end of being unshackled. It begins with the desire to seek truth without hesitation, to affirm the good without fear, to create beauty without selfish pride.

The central purpose of the University is to release the powers of the mind and set them to work in building a world in which man can have a full experience of his humanity and where all the goods and services of civilization will be utilized in meeting fundamental human need, and in elevating the life of all men. The demonstration centre is the University itself. The most convincing teaching of any institution is what shows forth in the character and quality of its corporate life. The pattern of relationship within the teaching staff and the manner of association between students and staff are reliable indications of what is happening to the minds and motives of this highly-selected population. In the first instance the University must be a prototype of the kind of nation that it is helping to build.

The extent to which institutions of higher education may serve the creative functions of custodian, critic, interpreter, pioneer, and guide for the whole nation in its pursuit of full selfhood and dignity for all the people, requires a careful look at the character and content of education which makes such a role possible.

The spirit, contents, and methodology of this kind of education must be liberal in the truest sense of the word.

This does not mean a programme of studies which provides a superficial sampling of the various academic disciplines. It is more than a comprehensive mastery of the subject-matter of the sciences, humanities, and social sciences. Such mastery is important, but is the lesser part of the total requirement.

Neither does liberal education, when properly understood, confine itself to generous provision for elective courses coupled with major concentration in a field of specialization. While liberal education is broad, deep, and inclusive in content, it is at the same time, precise in focus and exacting in its intellectual, moral, and social demands. Perhaps its distinguishing features are not how it fills the mind with large bodies of knowledge, but how it awakens, stimulates, and sharpens the mind and how it arouses, sensitizes, and quickens the ethical and moral capacities of those engaged in a quest for understanding and significant commitment of life.

It should be clear that liberal education, so interpreted, lifts all teaching and all learning into the highest and fullest dimension of academic endeavour. It transcends vocationalism without being anti-vocational. There is, all along the way, a direct connection between 'learning and life'. There is emphasis upon preparation for making one's contribution to the work of the nation and the world. It transcends professionalism without being anti-professional. There is emphasis upon basic undergirding for technical and professional competence without viewing every undergraduate course in Science, Mathematics, Economics, or Sociology as being preprofessional. In the same sense, liberal education breaks through the walls that have separated the University into divisions and departments which have become en-

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claves of special interest. The resulting fragmentation of knowledge has tended to produce one-sided University graduates and has encouraged invidious comparisons between students who are enrolled in the Arts or Science streams of Secondary Schools and University Colleges.

The motif and methodology of liberal education provide an open invitation to a different kind of elite than the persons of special privilege who have enjoyed the advantage of University attendance, sometimes without sufficient intellectual equipment and frequently without personal motivation or seriousness of effort. The new 'elite' will come from every part of the population. They will bring basic capacities and previous training appropriate to this higher level of academic work. A large percentage of them will survive the rigours of University life and return to the midstream of city, town, and village life as the bulwark of the nation in all matters pertaining to the growth of the country and the welfare of its people.

In this way the old 'aristocratic assumption' is transformed, provincialism is overcome, and the wasteful practice of grasping for a kind of 'detached intellectualism' will be transmuted into a search for the kinds of attitudes and equipment which qualify one to exercise 'enlightened responsibility' in every aspect of the formal and informal agenda of the developing country.

This approach provides for the division of labour in the work of the nation in accordance with talents, skills, interest, and specialized training. It recognizes the acute need for agronomists, engineers, teachers, doctors, creative artists, skilled workers in industry and commerce, statesmen, and research specialists. Yet there is recognition of need for that comprehensive and humane education which places at the centre of all expertness an awareness of purpose, a core of integrity, a broad public concern, and a zeal for honest workmanship and fair rewards. Such people are the strength of a nation. By them and upon them are the foundations of a stable and healthfully changing society constructed. Such persons are needed not only in densely populated urban centres, but also in the unattractive and remote provinces and country-sides.

In the delineation of the aims and objectives of liberal education in a developing country, it must be recognized that all countries throughout the world are at various stages of development and are placing unequal emphasis upon different aspects of national life. This awakening and prophetic role of liberal education is by definition the chief responsibility of educational institutions. It must become the central function of the University. This is an indispensable service to a country finding its way into the future. It is a primary obligation of the country to the capable and concerned in every generation as they grope toward maturity and as they struggle for positive identification with the yearnings and aspirations of the whole body of people in the local community and throughout the length and breadth of the land.

The minds of men and women thus set free from the shackles of passivity, provincialism, uncritical subservience to tradition, irresponsible dependence upon status, and special privilege will be released for imaginative productivity in the Arts and Sciences and in all the essential work of a nation that is discovering its unique identity as it extends its relationships with the world-wide community of nations.

This unique and pervasive impact of higher education would be within the context of the whole work of the University. This spirit, this emphasis, and this approach would be structured in the curricula of constituent colleges, but it is hoped that the orientation and attitudes engendered in undergraduate experience would permeate all advanced studies on the professional and postgraduate level.

Consequently, the aims and objectives of liberal education in a developing country may be stated as follows:

> To provide educational experience, to utilize educational materials and resources, to employ instructional methods suitable to the accomplishment of the following objectives:
>
> 1. To liberate the minds of students for inquiry into the ideas and creative works of the world's great thinkers and producers.
> 2. To release the minds of students for critical inquiry into the outstanding values in the national history and heritage.
> 3. To create an atmosphere in which exchange of ideas and an interaction of opinions are encouraged.
> 4. To provide a programme of studies which will introduce students to the substance and spirit of the major Academic disciplines (Science, Humanities, Social Sciences).
> 5. To provide a 'community of learning' in which students may achieve a high measure of self-discovery and fuller understanding of their relationship to others.

6. To help students in developing a reliable system of values by which ethical choices and responsible decisions are made in matters of private or public concern.
7. To provide contacts and human associations which will lift the sights of students beyond their own limited circles and engender a sense of broad social responsibility.
8. To stimulate and guide the development of the moral and ethical sensibilities of students so that proper regard is given to personal integrity and reliability.
9. To assist students in developing a sense of vocation and to counsel and guide them in selecting an occupation for the useful employment of their lives.
10. To keep the learning process in vital contact with the life process, so that no artificial separation be made between knowing and doing or between learning and living.
11. To concentrate upon all teaching and all subject-matter as instrumentalities for the maximum development of persons in their widest relationships and responsibilities.

This will entail some alteration of the syllabus, some changes of method, some fresh statements of purpose, some reorientation of teaching personnel. But this is the task which the country has delegated to its trusted educational philosophers, planners, and administrators. The task is difficult, but not insuperable.

POSSIBLE REORGANIZATION OF HIGHER EDUCATION

J. W. Airan

TO BACON'S 'Knowledge should be for the benefit and use of men' came a rebuff from Cardinal Newman that useful knowledge was 'a deal of trash'. Both, in a way, were emphasizing the right of the University to decide what it shall teach. But when Dr Albert E. Sloman, the Vice-Chancellor of the University of Essex stated recently that his University had decided what *not* to teach, he was reflecting the mood of the age which is witnessing explosion of knowledge on an unprecedented scale, and which is rapidly leading to an explicit acceptance of the role of higher education in the organization of the economy of a nation and in the formulation of its military policy. The same mood holds out to millions in the 'new' nations higher education as a panacea against their general backwardness as compared to, say, the United States of America and Britain. Plato's elite 'withdrawing from the world of ordinary men the better to rule it when they return from their bright abodes of truth' has already been replaced by evergrowing crowds of young men and women where the cries of 'falling standards' and 'rootlessness' precede any discussion of university education, and an utter sense of regret that specialization has introduced a general rot of disintegration on knowledge, overshadows any discussion of unity of knowledge. The University can no longer remain outside, but has to be 'inside the general social fabric of our times'. This is something what Flexner had anticipated in 1930, except that it is doubtful to what extent a University can be an influence 'operating both upon the present and the future'. Today the University must understand the new world which it is called upon to serve. This new world is a complex of old nations and an ever-increasing number of new nations. Each time a new nation is born the usual declarations of world solidarity and international understanding provide streamers for the world's newspapers, soon to be replaced by forebodings of widening fissures between the old and the new. Where does the University come in? Or, does it come in at all?

Should the University take upon itself the distress of the world or settle down to meet the needs of the immediate society which has brought it into existence? 'We created Ghana, now this University should create Ghanaians', as Dr Nkrumah said recently.

Apart from such considerations there is, however, a basic urge which moves people to set up institutions for *formal* learning. There is also a basic attitude which compels them to express their expectations of such institutions. These were very eloquently articulated by Aristotle way back in the fourth century B.C., when he said: 'It is clear that there should be legislation about education and that it should be conducted on a public system. But consideration must be given to the question as to what constitutes education and what is the proper way to be educated. At present there are differences of opinion as to the proper tasks to be set; for all peoples do not agree on the things the young ought to learn, either with a view to virtue, or with a view to the best life, nor is it clear whether their studies should be regulated more with regard to intellect or with regard to character' (*Politics,* VIII, 2).

Debate on education at every turn of history has hinged more or less on the twin problem anticipated by Aristotle: (*a*) what constitutes education, and (*b*) what is the proper way to be educated. Since education is a human adventure, it is the society, rather than individuals alone, which must influence this debate. And since society is always changing, contemporaneity must become the acid test of a vital system of education.

The Government of India Commission of Education, which is now holding deliberations on *education as a whole* will, it is hoped, not be much influenced by the present system of education in its attempts to make recommendations for a new system of national education, but will, on the other hand, raise basic issues of contemporary Indian culture and the compatibility or otherwise of their recommendations to the genius of Indian people. It is also hoped that the present position will not be taken for granted, and measures suggested which would *merely* enable us to measure up with the countries of the West, or with Russia, with regard to what one may call 'applied' knowledge. The working of the Indian mind and the present mood of the Indian society must needs be taken into consideration if the recommendations are to be met with any degree of success.

The first breeze of modernization which stirred Asian countries into activity came from the West. This *Westernization* implied 'copying' and then, as time went on, adapting Western manners. A person who knew Western manners was generally regarded as a properly cultivated person; one who had adopted Western ways of life and belonged to an elite. Japan alone identified the challenge involved in this encounter, and therefore was set more for *modernization* than for *Westernization.*

Modernization involves the nation as a whole and makes the problem of culture easy to identify, whereas Westernization concerns largely the individuals in the nation, and tends to introduce the complexities of split personality. Modernization assures dynamism, and by promoting independent collective approach and experimentation makes contemporaneity more meaningful. Indigenous culture then provides the 'roots'. It does not become a hindrance, nor can an invader then use it as a toy to keep the vanquished engaged. Our problem is that we have a large number of Westernized individuals *who are content* to be that. Even our intellectuals have yet to recognize and accept the challenge of modernity in a responsible way.

Modernity implies a tacit recognition of the phenomenon of *rapid* social change in the country, and of dislocation of the traditional centres of authority. It also introduces an element of 'restlessness' so characteristic of the age whose activities have their tempo set by frightful speed of transport and general communication. This, in turn, creates an abhorrence of the *status quo.* Tension is being looked upon as a sign of health. Militarily and economically powerful nations no longer yearn to conquer lands so much as to capture the minds of the uncommitted; hence, food, ammunition, and experts flow from rival developed countries into the bewildered developing countries. Thus modernization is a huge unsettling process in which the entire humanity is caught, and where indecision may do greater damage than a wrong decision quickly taken.

It is in this situation and in the midst of all noises in the market-place that the institutions of higher learning must function, and quickly decide what they must do. Toynbee warns that social classes or nations survive, or go under, as they make or fail to make an adequate response to the challenges facing them.

Briefly, the challenge which higher education in India must face arises from two major phenomena: (*a*) the explosion of student population, and (*b*) the explosion of knowledge. Overarching them, at each stage, is the general poverty of the nation. Depersonalization, evaporation into the thin air of purposes and aims of 'University' education, and the failure to question in a creative way one's own culture in its encounter with the cultures of other people are problems which are not peculiar to India, but are shared with even the most advanced nations of the world.

According to the University Grants Commission's Report for 1962-63, there were in that year in the Indian Universities and Colleges (including Intermediate Colleges) 1,272,666 students, recording an increase of 10 per cent over the number for the previous year. This figure is expected to rise to 1.7 millions by the end of the Third Five Year Plan.

Nearly 85 per cent of this student population is in the affiliated colleges.

The distribution of all these students according to the stage of instruction was as follows:

Pre-University classes ..	2,65,879
Pre-Professional classes ..	20,811

Intermediate classes	.. 2,33,881	
Graduate classes	.. 6,51,805	(51.2 per cent)
Postgraduate classes	.. 71,297	(5.6 per cent)
Postgraduate Research	.. 5,297	(0.4 per cent)
Diploma/Certificate	.. 23,696	

The needs of these students were somehow met by 1,938 Colleges, 55 Universities, and 5 Institutions 'deemed to be Universities'.

Of the 55 Universities, 8 were established during the year under review. Two Universities (Bombay and Delhi) are Federal, 18 Unitary, and the remaining 35 Affiliating type.

Of the 1,938 colleges, 1,805 were affiliated colleges and the remaining, University colleges. The affiliated colleges showed an increase of 129 over the previous year. Of the total number of affiliated colleges, 1,333 were in the private sector. Women's colleges increased from 211 to 235 during that year.

It is also interesting to note that of the total number of 1,938 colleges, 655 were Professional colleges, which numbered 584 in the previous year.

In view of the proposal for reorientation of the organization of formal instruction which the present paper contains, the position of postgraduate work in Britain as summarized by Dr Sloman in his 1963 Reith Lectures will be found helpful:

'Four graduate students out of five in this country, excluding those studying education, are engaged in research and follow no courses of instruction. Because of this the first degree course must take students up to a point at which they can be identified as potential researchers and be ready to embark upon research with little supervision. Yet this very same degree course has to be followed by the eighty per cent of students who have neither the aptitude, nor the inclination even, to be researchers. It is hardly surprising that for many of them the course is too specialized.' (*A University in the Making*, pp. 38-39.)

As can be seen, there will be continual increase in numbers of those who wish to receive higher education. Among the reasons for these increases can be included a universal desire of parents (even in the so-called developed countries) that their children get better education than they themselves received; a tendency to look upon higher education as an instrument for upward mobility in society, and as a possibility for obtaining political power. To the hitherto unprivileged, higher education appears as a means to gain material prosperity, even though it is generally recognized that education alone cannot ensure that. For instance, Japan is among the first ten countries of the world in the matter of education, but its per capita gross national product is one-fourth that of other advanced countries of the world; and the situation in Liberia, Venezuela, and Saudi Arabia is just the reverse.

There is yet another factor: No University in India can exist without legislative sanction, or keep itself going as an effective instrument of higher learning without being aided by public funds. Therefore, in order that higher education receive financial and even moral support of citizens, it appears that political forces may have to be mobilized in favour of higher education. Institutions of higher learning in this context may have to play even the role of 'persuaders' so that there will be a shift from educated individuals to educated society. This will entail a willing recognition of the need for accommodating 'new' students, i.e. students who come from homes without any University traditions or background.

This calls for a reorientation of the organization of formal instruction in such a way that distinct 'slabs' are recognized:

(*a*) Pre-Primary and Primary
(*b*) Secondary
(*c*) College
(*d*) Postgraduate

(This excludes 'Higher Secondary', 'Intermediate Colleges', and even 'University' as it is understood today.)

Such a reorientation does not discredit the concept of the *wholeness* of education but modernizes it. It also calls for an exploration on the part of the State of a creative and imaginative approach in sharing these responsibilities with private institutions and organizations engaged in the task of education. Adequate finance and a conviction that education has a transformative function are two of the main considerations which govern the motivation of totalitarian States in controlling education and educational policies. Democracies also recognize the significance of these two considerations but hesitate to appropriate them as instruments of State policy lest they impinge upon the rights and freedoms of individuals. Hence, in democracies, monetary 'grants' take the place of complete financing, and Aristotle's 'difference of opinion as to the proper tasks to be set' takes the place of 'Party Line'. Further, such monetary grants, in a democracy, may or may not imply governmental control depending very much upon the political maturity or immaturity of the democracy. In India planning is a new factor in the organization of the resources of the country. It has therefore to be conceded a place in the organization of education. The Indian Constitution has laid down primary education as the sole responsibility of the State. Gradually the State must assume equally full responsibility for the secondary education. Once this happens, the number of young people who would wish to join colleges will increase beyond expectation, and certainly beyond anything known today, unless other openings are provided for.

One of the results of the impact of science and technology has been that the minimum educational requirement for intelligent participation in modern life is rapidly moving from the completion of the secondary stage of education to the completion of college education. If this calls for a re-examination of the programme of secondary education, it certainly implies that the aims and objectives of college education, as well as the criteria for the evaluation of the end product, need to be stated in clearer terms. If we consider the present situation, which has begun to question the stratification that has so far characterized Indian social life, and if we make an attempt to meet the national goals stated clearly in the Indian Constitution or implied in it, then, the colleges will have to address themselves to a new task—*to secure personal and social development of all* students, and especially of the 'new' students *through academic programmes* and to see how a learning youth can become a functioning and a better adult at the end of his college course. This has to be the period in the educational experience of young people where the impact of modernization can be felt in a wholesome and meaningful manner. This, and not the secondary stage, is where for the first time in his life a young learner begins to come into active contact with *methods* of scientific thought and of technology, gets his first thrill of rational thinking and makes himself ready to participate in the renewal of society. For an Indian student, this is the stage where he can decide what skills he must develop and what insights he must acquire to help his country in her struggle for survival as a free and self-respecting nation fighting her own battles against poverty, against a growing lack of integrity in her public life, and against the divisive tendencies which threaten her corporate life.

If colleges are expected to fulfil this function, which almost amounts to their becoming centres for continual renewal of society and of men and women, their existence as special units free from the excessive demands for early specialization, in which more than eighty per cent of the students after all are *not* interested, must be guaranteed. In other words, colleges must become the main instruments of society for transforming the knowledge of its young people into the *power* of grown adults as a result of a widespread of general education. Then they will release into society a continuous stream of *educated* persons transforming it into an educated one. Under such circumstances if we yield to the pressures of large numbers, even conceding admission to *colleges* as a civic right, we would have in the end honoured our commitment. For then, this 'slab' of higher education which the college represents will become a worthwhile national investment and a 'producer of a desirable consumer commodity'.

A college which proposes to function in this manner will need to develop a suitable *curriculum* (not just a syllabus) which will reflect its philosophy of education which has arisen out of its concern to help the personal and social growth of its students at the intellectual level. Such a curriculum will include among other things a study of the natural sciences and a study of 'areas' of the world which have contemporary significance. These 'area' studies can be a suitable modification of the 'school of comparative studies' to which Dr Albert E. Sloman referred in his third Reith Lectures in 1963, broadcast on the B.B.C. The area studies will include study of (*a*) society, (*b*) government, (*c*) culture of the people concerned. This can be a two-year course.

The *assessment* of the effectiveness of this course in the life of the individual will involve a radical change in the mode of examinations as followed today. Criteria will have to be evolved to judge the development of the *individual student* with reference to himself rather than with reference to the achievements of another student. The practice of assigning 'marks' may be replaced by evaluating the student's work in terms of levels, abilities, and potentials. Should a student then find it necessary to discontinue his formal education at any stage, there will be no 'wastage' as we understand it today. For the student will have become familiar with his abilities which he can employ for the well-being of the society in which he will live, and also for his own further development. Should he decide to continue his studies into the remaining period of the college courses to pursue more deeply the subjects he likes best, the wealth of the background he has already gained will make the understanding of the subjects of his choice deeper and richer.

This approach will have received a fair trial if certain colleges are given a full measure of 'autonomy' to develop their own curricula and modes of assessment. This privilege should come under periodical review. This will have a dual effect: The college which is granted such an autonomy will remain alert, and other colleges which aspire to gain this position will make efforts to qualify for such privilege. The meaning of this suggestion will become clear during our discussion of the next *slab* of higher education.

The ancient universities of Nālandā and Taksasila attracted students from other lands. At Nālandā, for instance, there were students from Ceylon, Tibet, Nepal, Cambodia, and China. This must certainly have helped to stimulate discussion and exchange of ideas, and the method of teaching, we understand, was more to rouse disciples to mental activity than to instruct them in dogma. Unfortunately, however, these universities left no continuing traditions, and hence when the organizations currently known as 'Universities' made their appearance in India in 1857, there were no 'Indian' universities to study and to record the impact of this historic occurrence. If at all any questionings arose it was mainly in the context of the political repercussions caused by the tension between the British rulers of this country and the nationalist opposition. There was very little indication of an intellectual encounter. Hence, whatever the subsequent reforms, they were more of an administrative than of an academic nature. The growth of postgraduate departments, therefore, compensated for the lack of emergence of the *climate* or *atmosphere* of universities of the type of Oxford and Cambridge. This may be one of the reasons why in our own time the Radhakrishnan Report on higher education (1949) remained just a fine academic document. Nowhere in the new universities which came to be established subsequent to this Report can one discern, for instance, *even a desire* to probe into the deeper meaning of life—an aspect of the university the Report had so much emphasized. Even its plea for 'General Education' was soon reduced to a three-year degree *formula*. For lack of a coherent philosophy of education in our universities, General Education became just one of the 'subjects', and the resulting situation turned out to be worse than the one which the Radhakrishnan Report tried to remedy. Today the three-year degree course has not many enthusiasts left. We seem to have an uncanny gift for reducing academic reforms to pure and simple administrative reforms where, again, the insistence is on 'uniformity'. Even the University Grants Commission, in its concern for maintaining high academic standards at the university level, is tempted to think in terms of a Model University Act, and possibly of a Model Constitution for private colleges. What is really needed is the proper *atmosphere* (and it is here that the University can still be an 'idea') in which there will be possible a continuing discussion of purposes, ideas, interdisciplinary dialogues, a struggle to 'live from a greater depth of being', and of projections into the future. But instead, we are often content to think only in terms of rules and regulations for the affiliation of colleges, for appointment of examiners, etc. Meetings of our Academic Councils rarely display any intimate discussion of the basic ideas of education. Even the twin function of the traditional university education—(*a*) to teach; (*b*) to remain on the frontiers of knowledge—has left much to be desired, let alone Aristotle's anxiety concerning the *proper* way to be educated.

Are there any *Universities* left? Have we not moved away from Platonic ideals of the University to a position where the University is now expected to be a 'producer of a desirable consumer commodity'? It is no longer that place where the 'unity of thought' wells up from within the agonizings of its intellectuals. Instead, a new pattern of thought now prevails as a result of the impact of science and technology—its way of thinking, of investigation, and of evaluation. The search for truth has now become a desperate undertaking, where the intellectuals in a 'University' *fan out* in all directions lured by distant and faint beacons. On the way some may pitch their tents and look back hoping to *meet* their fellow-searchers, almost pining for what is no longer possible. Others, and they are very few indeed, push on, torn away from the centre, and further and further from their fellow-searchers. It is truly 'truth is this to me that to thee'. It will soon be a phenomenon of more than two cultures. And yet there must exist a body where a yearning for 'integration' and 'unity' can find fulfilment: *that can be the college*. It cannot be the University for the simple reason that the University has long since been replaced by the 'multiversity'.

And this is the present 'agglomerations of colleges and institutes and schools with little or no known universe of discourse . . . where professors commonly feel and express far more identity with their peers in other institutions . . . rather than they do with their own colleagues on the same campus'. What has happened now is irrevocable, and therefore our universities must hand down to the colleges some of their functions, principally the transformative function of education. For, the college alone can now be the most effective instrument that society has for the spread of civilizing influences within itself; for guaranteeing contemporaneity to its own culture, and above all, in this age of increasing contacts, for enabling it to understand and appreciate the cultures of other lands and peoples.

At the same time the University must now hand over to the multiversity, which is its true successor, the burdens it no longer can effectively bear, namely, the post-graduate departments. Such a multiversity, unlike the college, must of necessity be under juridical control so that the success of its fanning out operations in search of *truths* can be guaranteed. Its 'community' will always consist of diversified groups of specialists who have trained their sights, of necessity, on extremely limited objectives. Here is a new class of 'servants' of society emerging with no thought of going into it 'the better to rule it'. They are disinterested in the power that would lie in the hands of those who receive higher education, disinterested in the so-called national goals of their countries. They would be growingly unmindful of the geographical boundaries which divide mankind into 'blocks'. This is a new academic community, which is supra-national, which is coming into being the world over, and which consists of intellectual giants whose academic standards will be high, and as time goes on, will be higher and higher. Each group will sit in a house of glass and will take delight in the fact that the distance will continue to keep them apart. The present machinery of the traditional University can no longer guide this intellectual activity effectively. Its hope of progress lies in accepting the humbler but more appropriate title: 'Postgraduate Departments'. True international academic standards and academic excellence can thus be reflected in the life of any given nation. The multiversity will cause true specialization to flourish, and, from the status that it will acquire on the international plane, it will render to the varied activities of the society in which it is placed, a quality service which will augment its *economic* prosperity and general well-being. These activities will include industry, commerce, defence; and even the general academic standards at various lower levels will be toned up.

Such a multiversity may affiliate colleges to itself, and grant to some of them autonomy, subject to certain expectations. The colleges with well-defined aims and objectives will then be better able to develop their own curricula, their own standards in general. It is in these colleges that the desire for unity of knowledge can be expressed through a constant interdisciplinary dialogue, and the establishment of 'balanced departments' which will have in them fine *teachers* as well as those whose special inclination is towards research. Thus both the functions—that of disseminating knowledge, and of pushing further the frontiers of knowledge—can be accomplished at the college level in the interest of the vast majority of young people who wish to taste of higher education.

CRUCIAL PROBLEMS OF INDIAN HIGHER EDUCATION

J. Edward Dirks

ANY EFFORT to examine basic problems of higher education in India seems to demand an analysis of every aspect of that vast and diverse land. Such a requirement, naturally difficult, becomes even more so when made of an outsider. India with its bewildering variety of culture and people is in a state of large-scale changes, and all of the future directions of the society are not yet clear. One may stand in awe of contemporary India; one may gaze in bewilderment; or one may be transfixed by fascination. But the task of careful, objective, and hard-headed appraisal of everything that is happening to effect the course of India's colleges and universities requires knowledge and experience which few could be expected to possess. This essay must, therefore, begin with an acknowledgement of humility and inadequacy to the task; we can only hope that it will be fair, sensitive, and helpful.

We must, nevertheless, begin at the difficult end of the task: an attempt to examine the way in which the larger context of Indian culture and society makes special demands on higher education. The larger context bears within it a tension which influences much of what these institutions are trying to accomplish. One of the forces in the tension is the sheer power of continuing ancient cultural traditions. A time-honoured heritage is being more deliberately recovered today, and memory of the distant past is often fresh and vital. By contrast the colleges and universities are young and unseasoned. They belong to the relatively modern phase of India and do not have their roots in the traditional culture which now serve to give national identity. Not only is there a temporal gap, but in addition there is the fact that the traditional culture did not give shape to the objectives and procedures of a coherent educational system. In countries where culture has been the moulding force, education, especially at the university level, is the society's basic technique for instructing its most promising youth in the values and accomplishments of the civilization which they will help to lead. By contrast, Indian colleges and universities still struggle to serve the full culture in ways that are authentic. They still seek their true roots.

What is now wanted of higher education in India appears to be a programme which not only bears the marks of its culture but which can also serve an advancing society. Out of this struggle a new philosophy of higher education may be emerging—one which sees education as essential to the development of the nation. In so far as this is true, there is a growing sense of discontent with the patterns adopted from the University of London more than a century ago; these will need to be changed if not abandoned, however 'modern' they were when they were brought to India. Most of the educators with whom one can speak in India know and admit the truth of this. They also, however, express some uneasiness about making radical changes, for they fear that they may lose what is good in the present situation—the concern for liberal learning, a balance between the humanities and sciences, and, most important of all, certain recognizable standards of academic quality.

Change in the direction of modern impulses is, moreover, an expensive prospect for a society with innumerable problems and a low level of economic productivity. But a crucial problem arises at this precise point. The problem is that there is a widespread assumption in India that only an affluent society can afford an educational system of the highest excellence. The reverse may well be the case, that it is precisely the less favoured, less developed society, the technically and industrially less advanced, the traditional society at a lower level of economic equilibrium, which most needs to invest heavily in its educational institutions. To develop them and make them most productive of trained people and useful knowledge is something which must be afforded.

The large apparatus of India's educational development is impressive; it is also expensive, and the very size of it and its cost to the country make for some of the inertia in dealing with change. Advancement of it to meet more modern and international standards of excellence appears to demand so much financial outlay that there is an understandable tendency to assume that material welfare must come first, and that then the luxury of a more adequately staffed and equipped system of higher education can come. Such a feeling, however, suggests that education is a by-product of economic maturity, while it may instead be the case that the less developed society must invest first and foremost in education and then let the human factor do the rest. With proper investment and well directed outside assistance, material welfare can follow educational growth, new knowledge can be creatively applied in the productive mechanisms of the society, and the concern for a modern society and a working parliamentary democracy can be advanced.

To be sure, even such development of education as may be contemplated by the most progressive planners cannot overcome some of the tensions between tradition and modernity in the academic situation of India. The workaday, practical, modern world, which seems so 'real' in an up-to-date library or laboratory, suggests an increasingly rational universe. Method, order, structure, symmetry, these are the characteristics of the world with which we become more and more familiar. It is recognizably of the same rational structure whether we are discussing the birth of a star in galactic space, the transmission of the genetic code by the protein molecules of the chromosomes, the strengths and weaknesses of economic theory in the post-Keynesian period, or the identity of the noble friend in Shakespeare's sonnet-sequence. There may be large unsolved problems in the society, but at least there are methods whereby these may be approached. It is a rational world from top to bottom, and we can be confident that with reason, joined to data, men can prevail.

At the same time there is another 'real' world, and it moves through the streets which run along the back and sides if not the front of the colleges and universities: a real world of impenetrable human problems, of population, disease, poverty, class distinctions, charges of corruption in public administration or government. There are the forces of tradition, for good and for ill.

There is the spectre of possible unemployment or mediocre employment for the graduate. What it adds up to is a composite picture of irrationality, of unconquerable obstacles, however formidable may be the weapons of reason. With all the need there is to meet head-on a formidable array of problems in life as it is immediately at hand, there is a temptation to be resigned and discouraged. Unless there is a genuine vitality and thrust in the academic situation for the teacher or scholar or scientist, he too finds the conflict demoralizing. The tension can be a creative one, but it is not necessarily so. Until it is, there is a crucial problem at the level of fundamental attitudes; once it becomes creative, the tension can promote a concern to establish an integrated and coherent programme which can lift the whole level of vision and make academic objectives more realistic.

What is most encouraging to a visiting educator is the depth and the seriousness with which educational and institutional problems are now being taken up in India. Three crucial factors are increasingly linked together: a national perspective, the need for raising the standards of educational quality, and a suitability of education for modern society. Education is being seen as the most powerful influence in shaping the national character; science and technology are expanding to meet increasing demands from an industrializing society; and, the concern to develop institutional facilities and staffs, as well as the resources which they can use for study, research, and education, is growing. Analyses of educational needs have, in turn, begun to shift towards the institutions themselves, the relationships between them, and their needs in a larger national frame of reference. The concern for persons is not thereby being discarded; indeed, India's provisions for equal opportunity for education among all able youth is most impressive. However, problems of overall adequacy of institutions, a desired coherence in the total programme, and a heightened role of national planning for education are the ingredients of an outlook which is gaining influence.

Much of this is undoubtedly due to the importance of the University Grants Commission and its work toward institutional development. It is also expressed by the announcement of a new Education Commission to review the progress of education and to survey its development at all levels. But what it says, in addition, is that the colleges and universities themselves are wrestling with the hard problems of determining their own way forwards within a national framework. They are ready to assume more responsibility, to diversify their offerings, to improve the position of their staffs and the facilities they need, and to plan ahead for their development at the points of improved buildings, laboratories, class-rooms, and libraries. In all of the above ways, education is being rescued from being a routine function, the basic issues of education are being examined by educators for the sake of a more mature and responsible generation of students, and the very procedures of teaching and learning, which have become calcified in a largely unchanging system, are being rigorously examined with an eye to fundamental changes.

Before we turn our attention to the procedures themselves, we can note that the rapid expansion of educational provisions, and the growing demand for more expansion, not only raises certain problems but makes more apparent those which already exist. Many educators fear expansion thinking that 'more means worse', that already slipping standards will fall still more sharply unless the system is changed and more good teachers are available, and that any expansion will postpone giving heed to the urgent problems of quality and excellence. Other problems arise around needed consolidation of strength in certain institutions or certain departments, which draw upon the resources of a number of adjacent institutions. The issue here is how what the economists call the 'capital' in education might be 'deepened' rather than merely 'widened'. Then there are always those other problems which are perennially present—how to improve the position of teachers, the staff/student ratio, decrease the teaching load, increase opportunities for study and research, improve salary scales, and retain the best qualified intellectuals for the academic professions; or, how to build the necessary educational facilities, the buildings themselves and the provisions within them for the most efficient and effective educational work. These are issues which immediately confront the budget-makers and those who must find the money. But they are needs which seek to attack problems of academic vitality and output.

India has much to bring to the solution of these problems, even when its financial resources are severely limited. It has an immensely rich intellectual heritage and a traditional concern for 'the life of the mind' which can bear comparison with any other developing country. It has the institutional machinery to get the job done, both in the institutions themselves and in the channels between higher education and government. It has the interest and the understanding, as well as established lines of support from abroad, in a number of countries which have already demonstrated their readiness to help. Everything cannot be done simply by importing machines and technicians. But ways and means are available which can be channelled into the Indian situation in a co-ordinated way and which will assist India with the development of its immense human resources. The training of young men and women provides the basis for perfecting the human factor—that is, the factor which in the final analysis is the basis of hope, a generation with foresight, initiative, skill, knowledge, and effective application of ideas for the common good, a generation of independent, capable, determined, confident, and resourceful people. Such an objective is the only proper end in view for the widespread concern for institutional development.

We must turn finally to the problems which lie in the areas of educational practices. These are not unrelated to what has been said above about the importance of strengthening a vital and true intellectual community, the kind of community which creates the pressures to lift academic standards, keeps itself abreast of the most advanced developments in the disciplines and the sciences with scholars everywhere, and contributes effectively out of India's own resources and experiences to the worldwide community of learning. But it is still true that even where such a community now exists it must still struggle with patterns of educational practice which seem to be in urgent need of review and change. There are already such communities, to be sure; a distinguished list of Indian scholars and scientists can be drawn up by any knowledgeable person, and he can show that their contributions have been of profound importance in many fields; it is clear that the Indian student is intelligent, capable of hard work, and ready to identify himself, as well as to have his skills put to work, within a society which is involved in changes.

When we consider educational problems and issues, the primary focus of our attention is what we may call 'the pedagogical encounter', that is, the involvement of teachers and students with one another with respect to a field of significant academic learning. Its central if not sole object is that learning may take place, and for this reason effective teaching must be possible. These are both human activities; they are fallible, purposive, critical, experimental, reasoned, and responsible. We can fail in them or succeed; we can do them in routine ways or with clear purposes; and so on. Since learning is the central objective, we can inquire into what it means. Two meanings engage us. In the first of these, learning means to parrot, to acquire, to retain, to have the ability to repeat or reproduce. This is all it means, and the critical distinctions between true and false, probable and improbable, meaningful and meaningless, rational and irrational, understood and not understood are all irrelevant to this activity. In the second meaning, however, learning means something more; it means coming to know, to liquidate our ignorance about, to understand, and here all the great and important distinctions about knowledge hold.

The attempt to sharpen this fundamental distinction in relation to the pedagogical encounter as it takes place in an Indian college or university is an effort to raise a crucial problem. It is the problem that the weight tends to fall more upon the first meaning than upon the second one. When it results in a sophisticated ability to parrot, but tends not to be productive of careful knowing, then schooling and instruction and memorization may be taking place, but one may seriously ask whether education at the higher level is being advanced. In itself this may not be tragic, for after all a student should have learned something in the first sense and have information at hand when he needs it. But it is tragic if it has failed to prepare him for reasoning in a disciplined way, to take him to the point where he can arrive at sound judgements with the use of relevant facts, and to provide him with a basis upon which he can continue learning in new situations and with respect to a wide range of issues. An education can be said to have failed if it does not produce a genuinely independent mind.

Certain crucial problems in education do arise in India from the fact that patterns are built into the whole system which shift the weight heavily upon the first type of learning and tend to give less emphasis to the second. The patterns are reinforced by the rigidity of the educational programme, the curriculum, and by the examination system which has served as the whipping-boy of that system. Lectures become dictation of notes-to-be-learned (sense one) instead of the initiation and stimulation of the activities of thought in the minds of students. Preparation for examinations becomes a matter of memorization, at least for that brief period between the crucial moment of studying and the examination itself. And a grantedly underlying support of the pattern is to be found in the problem of the medium of instruction, with the difficulty that is posed for anyone who wishes to learn in the second sense if he is using a language strange to him. It is encouraging to a visitor to see the way in which some of the colleges and universities are giving these problems their attention by providing orientation programmes to entering students, intensive language instruction in the new medium, and opportunities for more advanced students to engage in independent studies.

It may be that one of the crucial problems is structural, in the sharp distinction between the teaching responsibilities of colleges and the research opportunities for universities. This involves an artificiality for the scholar-teacher, whether in the humanities or the sciences, and it is both demoralizing to the best teachers and a disadvantage for the more able students, whether undergraduate or postgraduate. Greater interest in research is developing among the best younger staff members in the better colleges; these early efforts are showing good results and promising for future development. But until there is greater flexibility for research, advanced study, and teaching, more concern about sabbatical leaves for study and advanced research purposes, and a greater amount of linkage between teaching and research, the instructional work in the colleges will continue to lean most heavily upon rote learning and will not give rise to the creative and independent student who can continue his learning for the rest of his life.

Once the continuation of learning is the driving thrust in the Indian college, we may also expect some loosening up of the curriculum and some independence of the teachers with respect to syllabi and other teaching resources. Innovation is now difficult in course offerings, since the courses are set in a standardized way. Lecture courses, seminars, and independent study programmes might well, in time, be more oriented around advanced study and research, especially for the students at the upper levels of the B.A./B.Sc. course, but this would require the possibility of instituting particular courses more easily, changing them from time to time, and abolishing old ones. To be sure, what now keeps them in a rigid formation is, very largely, the examination system with the university-administered set papers. What is suggested here would, in time, require a willingness to have individual teachers carry more of the responsibility of education, including the examination of their own students.

Perhaps the root problem is that of numbers. It is both distressing and encouraging to a visitor to India to see what the colleges and universities do for so many with so little. Overcrowding seems to prevail in most institutions; and the pressures are unendingly directed towards increased numbers. What is most heartening is that India is extending fundamental rights to more of its citizens of all economic levels; and what is impressive for the educator is that this in itself is interpreted as including the right to education, even higher education. To be sure, this demand must be met, as it is being met, by increasing educational facilities and provisions, enlarging existing institutions and adding new ones. But the effort to meet the increasing demands at the same time that there is a sharp and disturbing awareness of the problem of quality poses the most crucial problems for educational leaders, the society, and the government.

What can be done in this situation is, at best, limited, but it can and must be aimed at the right point. The first basic point, in conclusion, is the insistence that educational opportunity must be extended on the premiss that it will be provided for those who have the capability of profiting from it and who can, in turn, benefit the society at the most needed points by their education. There may well be a right to higher education, and it may be fundamental among the rights of young people today. It can, however, be exercised only by those who win their right on the basis of promise and ability, and who give some assurance that they will discharge their responsibility as educated citizens in the society. The purely academic aspect of the challenge is clear: The right to education may exist; the holding of a degree must be earned! If education is primarily oriented to the degree, rather than to knowledge and ongoing capacity (to which the degree only bears testimony), then the distinction must be made between the right to an education and the right to a degree. The degree now as always must be earned; no one holds it by right!

The college degree bears testimony not only of intellectual capacity; it also gives an indication of a style of life, of values which are cherished, and ideals which are sought after. To learn in order to know is perhaps the first order of business in the academic community. Not far behind it, however, is the importance of learning in order to value. This capacity is developed, as every educator knows, not only in class-rooms, but in the ethos of the institution—an ethos which can provide for continuous growth in the perception of, and commitment to, values which are needed by the whole of a society. Until young men and women, to India and elsewhere, learn to know what is of true worth to man in our changing times, education anywhere might turn out to be more peril than profit for humanity in the future.

CULTURAL ROOTS AND THE MODERN UNIVERSITY

P. N. Mathur

ALL THINKING people, both in the East and the West, seem to be agreed that all is not well with the modern world and our present civilization. No one can dispute the proposition that the ills which beset modern civilization are many and varied in nature; they are political, social, economic, moral, and cultural. It may seem that any solution is bound to prove inadequate. But amidst this diversity some unity has to be discerned if the problem is to be viewed in its proper perspective and totality. This unity, in my opinion, consists in viewing the whole question as fundamentally a 'cultural' question. The crisis of our age is essentially a 'cultural' one and if a successful remedy for the present situation is to be attempted this fundamental approach must be kept in view.

I am fully aware that calling the present world crisis as essentially a 'cultural' crisis might be considered a mistake. It may even be called an unhistorical and unscientific approach by those who think that the whole history of man can be understood and interpreted only in terms of production and distribution. From their viewpoint 'culture' is only an expression of the basic economic relations prevailing in society at a particular time. This is a monistic interpretation of history in terms of the economic or material factor. This is not the occasion to go at length into this controversy. But I would, for the present, make only two observations: First, I do not deny the important role of the economic factor in the history of man. Second, for all practical purposes and for all human planning in every walk of life, we have to take note of both the subjective and the objective factor simultaneously, without going into the philosophical debate as to which of them is more fundamental. To put it differently, without going into the issue whether the ultimate interpretation of human history should be 'idealist' or 'materialist', I am inclined to think that the dualist view which recognizes the mutually interdependent role of both subjectivity and objectivity is the correct for all practical purposes. Therefore, when I say that our modern civilization is facing a 'cultural' crisis I do not imply that the objective factor has no significance. But I do mean that even the objective factor, in spite of its own inner laws of development, is coloured by the subjective approach to life that the society possesses. Here it may be useful to explain the word 'culture' as I have used it. I am conscious of the delicacy and difficulty of defining it. But for my present purpose I would say that 'culture' fundamentally and broadly means the basic approach to life which is expressed in the various thought and behaviour patterns of a people. Ralph Linton in his *The Cultural Background of Personality* says, 'For the present it is sufficient to define a culture as the way of life of any society.' (p. 12.) The way of life is nothing but approach to life outwardly expressed. 'Culture' so defined is the 'subjectivity' that colours the 'objectivity' also. And it is in this particular context that the cultural crisis facing the modern world has to be understood. Let me explain this a bit in detail.

Modern world civilization is really the civilization that arose in the West. This civilization arose under a set of historical circumstances. It was the result of a certain approach to life which we found manifested in the Renaissance, the Reformation, and the Revolutions. The Renaissance was the manifestation of that approach in the field of culture; the Reformation was its manifestation in the field of religion; and the Revolutions (The Glorious Revolution of England, the French Revolution, the American Revolution, and the Industrial Revolution) were its manifestations in the fields of economics and politics. It was this combination of cultural, religious, political, and economic revolutions that expressed the essence of what may be called 'Western culture'. This basic approach expressed in the various fields of life was that of Reason. Thus it would not be incorrect to say that the Western culture is the application of Reason to various fields of life. The over-all effect of Western culture has been the establishment of the secular status of the individual. It has promoted modern scientific knowledge and technology, political democracy and nationalism, a sense of religious freedom and economic liberalism. It has also promoted and emphasized qualities like dignity of labour, efficiency, organization, and discipline. But we all know at our cost that these various effects of Western culture have rather miscarried. Scientific knowledge and technology have led to the development of the means of mass annihilation in place of developing what may be called scientific approach or temper. Similarly democracy has led to party domination and nationalism to such forces as imperialism and fascism. Religious freedom has come to mean destruction of all faith and economic liberalism has given rise to such scourges as mass poverty and unemployment. Dignity of labour has been disfigured by exploitation of labour; efficiency has been the efficiency to kill rather than construct; organization has been organization for war rather than for peace; and discipline has been more in the nature of an external and standardized imposition than an expression of inner harmony. Thus, when I say that the modern world faces a 'cultural' crisis, it is this miscarriage of Western culture to which I make the reference.

The next question which arises is: What is the cause of this miscarriage of Western culture? Philosophically speaking, there is a certain imbalance revealed in Western culture. This imbalance is the result of the overemphasis of one set of human values to the neglect of the other. 'Self' is the foundation of Western culture—however wide or narrow may be the scope of this 'Self'. It emphasizes the external or materialist side of total existence. Therefore, Western culture is called materialistic in nature. It has attached—and continues to attach—a very great importance to material achievements in life. This needs correction.

Now correction is not elimination. I do not deny materialism. I do not say that material achievements are unnecessary. In fact, in a country like ours they are very necessary. Therefore, the real question is not to deny materialism a place in the scheme of things but to give it its due place. Western materialism has to be corrected with Eastern spiritualism. This alone will remove the imbalance of Western culture, and a composite world culture would be created in the emerging one world. This is our most crying need.

Here a word about 'Spiritualism' may be in order. First, it should be clearly understood that spiritualism does not mean that material achievements have no place in life. The wrong does not lie in promoting material achievements as such but in the approach we have to this materialism. To approach material achievements materially is, in my opinion, wrong. To approach them morally or spiritually is right. In other words, this means recognizing the fact that spiritual development is to be regarded as the ultimate end of life and material means are justified only to the extent that they are necessary for the fulfilment of this spiritual end. If the motivation of materialism is 'self', that of spiritualism is 'selflessness', not even 'unselfishness'. 'Unselfishness' presumes the existence of 'self' whereas 'selflessness' implies its total denial. This 'selflessness' or 'spiritualism' does not, however, presuppose withdrawal from life. It is neither monastic asceticism nor preparation for the mountain-top. Again, it is neither the state of a remote metaphysical mind nor a mere idea-spinning nor a broad intellectual generalizing. Last, but not least, it is not a sorrowful physician of the malady of life. It is, positively speaking, much wider than any particular religion. It is not exclusive but all-inclusive. It wants us to face our problems in their multiplicity as well as in their dynamics. It sees the Infinite behind the finite, Reality behind the appearance, Reality which is not behind man and the world but within man and the world. It is 'Knowledge', 'Power', and 'Beauty'. It envisages within its range all activity, human development, expansion, vigour, joy, light, power, and perfection. It is definitely not seclusion. It means a full social life where one works for the knowledge of the true 'self' through service to man and society. In other words, it is an approach of activity, but of non-attached activity. It is an approach of sacrificial action, action that does not bind the actor, but rather liberates him. Spiritualism so understood should balance and correct the modern Western materialism. Out of this synthesis of the West and the East a composite world-culture should arise. Modern humanity will thus be saved from the impending catastrophe.

Professor F. S. C. Northrop in his *The Meeting of East and West* emphasizes the need for this synthesis. He writes, 'the East and the West' when analysed to determine their basic scientific and philosophical foundations, are found to be saying, not as Ananda Coomaraswamy has suggested, the same thing; nor, as Kipling affirmed, two incompatible things; but, instead, two different yet complementary things. Thus, although the two great civilizations are different in a most fundamental and far-reaching way, there can none the less be one world—the world of a single civilization which takes as its criterion of the good a positivistic and theoretically scientific philosophy which conceives of all things, man and nature alike, as composed of the aesthetic component, which the Orient has mastered, and the theoretic component, which it is the genius of the Occident to have pursued.

'This means that the present meeting of the East and the West, to which individual decisions in both parts of the world have already committed mankind, may occur without conflict providing each understands the other. It means also that this can occur with genuine additions to and enrichment (aesthetically, scientifically, economically, religiously) of the traditionally incomplete cultures of the two civilizations.'

If it is agreed that the development of a composite world culture is the greatest need of the hour, the next question that follows is how such a development can be made possible and what can be the role of the modern university in this respect. Differently put, should the modern university have any cultural roots, and if so what and how can they have them? Our answer to this question depends upon what we think to be the essential functions of a university. The university is a seat of higher education and learning. The aims of a university may be broadly classified under three heads: (*i*) Cultural, (*ii*) Intellectual, and (*iii*) Utilitarian. It should, however, be remembered that no watertight compartmentalization of these three aims is possible. They act and interact upon one another. No culture has ever existed in a vacuum. It has always had an intellectual background and a utilitarian base. Discussing the aims of university education, the Radhakrishnan Report on University Education writes: 'They (universities) must enable the country to attain, in as short a time as possible, freedom from want, disease and ignorance.' This is nothing but pointing out the utilitarian aim of university education. The Radhakrishnan Report also mentions the 'Universities as the Organs of Civilization'. It says: 'If India is to confront the confusion of our time, she must turn for guidance . . . to her men of letters, and men of science, to her poets and artists, to her discoverers and inventors. These intellectual pioneers of civilization are to be found and trained in the universities, which are the sanctuaries of the inner life of the nation.' This is nothing but emphasizing the cultural aim of university education. About the intellectual aim of university education, the same Report observes: 'Universities are the homes of intellectual adventure.' In their utilitarian aspect, universities should be able to create an integrated and satisfactory way of life, in their intellectual aspect they should disseminate and advance knowledge, and in their cultural aspect they should impart wisdom.

From what has been said above about the functions of the universities, it follows that modern universities should have cultural roots, with a view to help the development of a composite world culture, about whose great significance I have already written at some length. It is unfortunate that so far out of the three major functions of the universities, though the intellectual and utilitarian functions are generally emphasized, the cultural function has not been given the weight that is its due. This situation needs to be remedied and the urgency for this can never be greater than it is at present when the whole human race is face to face with a crisis of cultures.

I have said that the universities have an important cultural function to perform, especially in the present time. This naturally brings me to the next question. How far is such a function being performed by Indian universities? Even in some responsible quarters, there has been a tendency to make a sweeping condemnation of our universities. I do not feel inclined to agree to it. No doubt Indian universities of our times are not an indigenous growth. They are largely exotic in nature and are pale and, in several respects, not very faithful imitations of their British counterparts. They have never kept before them a conscious cultural objective, and to the extent they have carried on the function of diffusing culture, they have carried it on more or less incidentally, and the culture diffused has been superficial layers of Western thought and behaviour pattern. There are certain desirable qualities in Western thought and conduct and we, as a nation, have adopted them the least. But we have tried to copy them in their habits of dress, food, and manners, and in all sorts of other mannerisms without realizing for a minute that thereby we are undoing our own national culture. In this context I have a strong feeling that one baneful effect of English education in this country has been that of deculturizing our youth. And there is no doubt in my mind that our universities have not contributed a little to this deculturization. This I say knowing full well the many good things that these universities have done for us. Shri S. R. Dongerkery in his *Thoughts on University Education* writes: 'To live and act as a responsible human being an individual must be familiar with the nature of his physical surroundings and know his obligations to himself and to the society of which he is a composite part. He cannot discharge these obligations satisfactorily if he is a stranger to his national culture. . . . As a result of the influence of British rule, and the impact of Western civilization which was one of the inevitable consequences of that rule, the average product of our universities resembles a sapling transplanted in an alien soil, because he has imbibed through his education more elements of Greek and Latin than of Indian culture.' The position after independence has not in any sense changed for the better. Therefore, if our universities are to be the real benefactors of our national life, all this has to change. The important question, then, is what should be the directions of this change and how can it be achieved.

So far as directions of the change are concerned two things have to be kept in view. First, our universities must be the centres of our national culture. The Spanish savant, Ortega y Gasset, says that culture is 'the vital system of ideas of a period'. It is this vital system of Indian ideas that our universities should preserve and disseminate not in a static form but as a dynamic process.

But I would like to sound here a word of caution also. When we say that our universities should be the real centres of Indian culture, we should be very clear that it is in no way a slogan of chauvinism or jingoism. Our outlook towards life is neither aggressive nor exclusive. We do not mean to plead for any kind of social, cultural, or political indoctrination. And this broadness of outlook leads us to the second point which has to be kept in view in this context. When we emphasize the need to make our universities real centres of Indian culture, we do not forget that the everflowing, evergrowing, and dynamic Indian culture has to provide only one of the foundations of an evolving world culture of which also our universities have to be the living organs. The second foundation of this composite world culture has to be provided by what has been known as the Western culture. It is this composite world culture to which I had referred above which alone would bring about peace and harmony in the conflict-torn world of today. Here a doubt may arise. Is it not self-contradictory to talk, on the one hand, of making our universities real centres of Indian culture, and, on the other, of making them contribute to the evolution of a composite world culture? My answer is an emphatic 'no'. Because what we know today as Indian culture is itself a composite culture and, therefore, the composite world culture which we wish to evolve need, in no sense, be un-Indian. My purpose in calling it a world culture is twofold. First, I think the modern world needs such a culture for ending its manifold ills. Neither the isolated and exclusive spiritualism and 'other-worldliness' of the East nor the attached involvement of 'this-worldliness' of the West, separated one from another, is going to prove satisfying for the modern humanity. The sense of social equality and justice and scientific temper of the West have to be harmonized and synthesized with the spiritual approach of the East, and this alone can provide a sound and lasting base for a healthy and growing humanity. Then we have also to remember that this synthesis of the West and the East, this compositeness, is a matter of the inner content or spirit only. Its outward manifestation is bound to display and should display from nation to nation (I am using the word 'nation' in a 'cultural' and not 'political' sense) a diversity of form and expression in various walks of life. It will be the impact of each nation's own geography, history, tradition, religion, and philosophy. So it is this diversity with an underlying unity that the composite world culture of my conception would express. And it will leave room enough for this composite world culture to be expressed in its different national forms.

Now, what transformation should our universities undergo in order to perform their above-mentioned cultural function? In my view this transformation is necessary in three fields: (*i*) the field of knowledge and teaching, (*ii*) the field of values, and (*iii*) the field of behaviour.

Coming to the field of knowledge and teaching, two changes are necessary. One, the courses should be so reframed that specialization in any of the three areas of knowledge, Humanities, Social Sciences and Natural Sciences, begins only when the mind is ripe after an adequate course in liberal education. At present there is a tendency for too early specialization and the teaching of science and technology has become popular at the expense of cultural studies. Shri S. R. Dongerkery writes in his *Thoughts on University Education*: 'The devotion of too much attention to restricted fields of study, whether in the domain of science or that of art, is apt to create a wrong sense of values by giving a narrow and distorted view of life and knowledge.' For correcting this, one remedy is to begin specialization at the right time. The other is to widen the course of study so as to give the students of one faculty an opportunity to have an aquaintance with other faculties. We need, at the First Degree level, balanced courses so that students do not develop a one-track mind. It is with this view that a new subject under the title of 'General Education' has been introduced in many of our universities. But a thorough assessment is necessary to assure that this new change is proceeding on right lines. The second change that I wish to suggest in the field of knowledge and teaching relates to the fact that our existing university courses do not give our ancient thought and scholarship their due place. On the whole, as far as I know, our studies in different branches of knowledge begin with Western thought. What has been the Indian and the Eastern thought in various fields of knowledge should also be studied, necessary research organized, and these should be integrated with modern thought. In my opinion, this is a more valuable and desirable objective than developing Indological studies separately and keeping them apart from the current of modern thought.

Coming to the field of values, my point is that the impact of Western culture has created a one-sided approach to life. It is a lesson of history that revolutions have gone astray. The French Revolution led to Napoleonic rule and the Russian Revolution to Stalinist dictatorship. The Industrial Revolution spread mass misery and privation. In every case the common man has been betrayed. Why has it been so? For the simple but fundamental reason that the significance of internality or subjectivity was not adequately realized and an imbalance between the inner and the outer powers of man has been the most natural result. A revolutionary of today becomes a reactionary of tomorrow, with a mere change of place, and all progressive thought is ended in obscurantist action. These tragic lessons of history establish the need for a reorientation of the values of life. And it is this reorientation which should be one of the chief functions of our universities. The main plank of this reorientation should be that the spiritualism of the East has to inform and permeate the democracy and science of the West. We need spiritualization of our modern social awareness and scientific genius. Otherwise, as has happened so far, we will continue to find such monstrosities as racialism, narrow nationalism, imperialism, capitalism, fascism, and (so far as its totalitarianism and inadequate philosophy are concerned) communism co-existing with democracy and humanism, and science being vulgarized and prostituted. Such a change of life-values, when brought about within the portals of our universities, will change our meanings of civilization, progress, and happiness. We shall then realize that mere unintelligent multiplication of wants and indiscriminate use of science are not indicators of civilization; material abundance is not progress; and fulfilment of physical wants does not mean happiness. The reorientation of values for which we plead would replace multiplication of wants by their refinement and indiscreet use of science by harnessing it to the service of humanity. Similarly, progress will not be considered to end with mere material abundance but would be interpreted as a cultured existence at a higher level and happiness would be understood as a balanced state of being, of mind, and of spirit. This will not mean suppression of man but his sublimation.

The last field of transformation referred to above is that of behaviour. Behaviour is nothing but a mere projection of values. Therefore, a reorientation of values is bound to result in a change of behaviour pattern also. The whole atmosphere of our universities at present is more or less alien. There seems to be a layer of superficial foreign culture imposed from above. This can be seen in more ways than one. Whether it is a question of student-teacher relationships, of standard and propriety of conduct, of mannerism and modes of living, of habits of food and dress, of celebrations, ceremonials and rituals, of architecture, furniture and furnishings, everywhere the same foreign approach dominates. As in the fields of thought and of values, so in the pattern of conduct and behaviour there is no room for absolute purity. I quite agree that a process of give and take must go on in this respect. But what I am trying to object to is not this flexibility and the process of normal exchange between cultures, but a state of total domination and ultimate replacement of the one by the other. And I am strongly of the opinion that to perform their cultural functions adequately, even in this respect of outward behaviour, our universities have to change.

In the foregoing pages I have tried to place my views about the changes which our universities should introduce in themselves so that their roots may strike deep into the Indian soil and flower and fructify in the best possible way, because in their strength lies the strength of the nation, in their health its health, and in their progress its progress. It is the youth of today who would be the master-builders of tomorrow and there can be no two opinions about this that they will build in the manner they have themselves been built. Therefore, it is bound to be the earnest desire and sincere prayer of us all, that our universities rise to the height and stature that would become not only our ancient tradition and leadership in the field of thought but also serve the compelling needs and exigencies of the modern world of freedom and science. This way lies peace, prosperity, and happiness of this war-weary world.

THE MEDIUM OF INSTRUCTION AT THE UNIVERSITY

Amlan Datta

MY CHIEF concern in this essay is with the medium of instruction at the university; but university education derives its special character and functions from being part of a whole, and I find it necessary to state very briefly how I expect these two to stand in relation to each other in the coming years before I can discuss meaningfully the issues with which I am more directly concerned.

The Government of India intends to make primary education available to the masses of people in the near future. In secondary education a substantial increase in numbers can be safely forecast; but perhaps the most important change to be expected is a change in quality, including, for instance, an increasing emphasis on mathematics and the basic sciences. This also makes it necessary that a system of twelve years of school education be established before long. As a matter of fact these trends are already visible. It will be utopian to expect higher education to be widespread in the coming years. Among those who will receive primary education only a small fraction will go much further. A large number will simply have a few years of schooling followed possibly by vocational and on-the-job training: these will supply our growing need for skilled and semiskilled labour. A comparatively small section of the school population will join the universities: from their ranks will come administrators, scientists, engineers, teachers, and people pursuing other liberal professions. A developing country has continuously to borrow knowledge and techniques from the more advanced countries and adapt these to its own needs. University people will be expected to keep wide open the channels of communication with the rest of the world. In a democratic community and in a period of massive social and economic transformation it is also necessary that ideas initiated at the top are constantly interpreted to the common people. There is yet another matter which deserves special mention. In a period of transition, stresses and strains develop within a community and tend to disrupt its unity. People with higher education are expected to provide that wider outlook and broad framework of values within which localism can be kept under check and order can be combined with progress. I believe that this picture of a broad base of mass literacy, a narrow apex of higher education, and a great deal of regional fixity* at the bottom is a realistic model of India in the coming decade.

That the mother tongue should be the medium of instruction for those who will never go in for higher education seems to be an obviously sound idea. More controversially, I would add that there are good reasons for retaining the mother tongue as a medium of instruction at all the higher levels of education. Some progress has already been made in this direction; more is necessary. Two reasons in particular have been put forward for making the mother tongue a vehicle of higher education, and I find both eminently sensible. Let us consider them briefly.

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* Even in more developed countries like Britain there is a great deal of regional immobility of labour. It would be unrealistic to expect the situation to be quite different in India.

Much of our education today is plagued by 'verbalism'. Words mean more to us than ideas. Words stand between us and life and its problems. Now this is partly the predicament of all stagnant societies, but in our case the situation is further complicated by the fact that knowledge is presented to us in a foreign language. In their foreign garb words come to us like magic formulae. From this follows a variety of vices. We pile up words endlessly and repetitiously, taking pleasure in them for their own sake or for their quaintness, without caring to achieve a progression of ideas. Propositions are cut off from their practical application. Thus words cease to convey real knowledge; they become a substitute for knowledge rather than an aid to it. I am not suggesting that all this will disappear as soon as we express our thought in the mother tongue. Nor shall I deny that some people have expressed very good thought in a tongue which is not their own. But there are very few people who can express themselves creatively or expound anything like original ideas in a foreign language without being able to do the same in the mother tongue, while there are many who are capable of effective expression in the mother tongue but not in a foreign language. The mother tongue has a number of advantages for whoever has not been alienated from it early in life by special circumstances. Its rules of grammar and syntax are not imposed on us as by an external authority. It is enriched by association with childhood and life experiences. Its words have a certain transparency, while foreign words have often to be translated back into corresponding words in one's mother tongue before they can focus on real object or ideas. Writing in a foreign language one is apt to be constrained by an underlying, often not fully conscious, lack of assurance, which makes one overly cautious and too ready to turn to clichés for safety. The mother tongue is an aid to boldness of thought. There are some very good arguments for combining the mother tongue with at least one other language, about which we will say more later; but it is a pity to have to discard the mother tongue.

There is a second major argument for retaining the mother tongue, or the principal regional language, as a medium of instruction at the higher levels of education. Between the great body of our common citizens and the minority of people with higher education there must be no insuperable barrier any more than what the content of higher learning makes inevitable. Let us take a closer look at the argument. In higher physics, philosophy, or even economics, there are issues in which the common man is unlikely to be interested, whatever the language in which these issues are discussed. But the questions debated by physicists, philosophers, and economists have often some bearing, direct or indirect, on matters which concern the common man or in which he can be made to take interest. A democratic society must endeavour all the time to interpret the abstract and the remote in terms of the concrete and proximate interests of common people. The interpreters, even when they are not original thinkers themselves, must come from the highest educated sections of the community. Tolstoy may have overstated the point, and, in any case, the proposition may not hold good for every individual considered separately, but an intellectual elite which refuses to bind itself by sympathy to the rest of the community and share some of its concerns cannot escape long a devitalization of its moral life. Communication is impossible without something approaching a common language. It is necessary that scientific knowledge be made available to ordinary citizens in an intelligible form and that problems of common interest in social and political life be similarly discussed by specialists for a wide audience. For all these reasons the bond of a common language between the more educated sections and the less educated is necessary. Moreover, the less educated must have the opportunity to rise higher in the scale of education, and it is desirable that his progress is not suddenly obstructed by a barrier of language. This can be more easily assured if the mother tongue, having been adopted as the medium of instruction at earlier stages of education, is never altogether discarded.

There is one oft-heard objection to the adoption of the regional language as a medium of instruction at the university which we might as well consider at this stage. It has been argued that our regional languages are too undeveloped and textbooks for university students cannot be written in them. More particularly, they are considered to be unsuitable for the writing of textbooks on the sciences. The argument, if valid, would be weighty, since the emphasis on the sciences is going to grow with the years. But is the objection valid? It is well known that one of our greatest scientists, now a national professor, has taught science in the regional language at the university level in Calcutta. It might be thought that this is a feat possible only for a genius. But is that all that there is to it? It is perhaps easier to teach Western science in our regional languages than Western philosophy. Technical terms in science and technology can be more easily adopted in the Indian languages without any important change than philosophical terms. Scientific relations are exact and unambiguous, while language in the humanities is more overlaid with ambiguity and a rich suggestiveness which is difficult to convey in a different medium. Once the terms have been carefully defined, scientific propositions can be set forth in a different language with greater ease. On the other hand, we have in philosophy the advantage of a tradition of dialectical discourse and metaphysical speculation. This is a sufficient basis to build upon. For the rest, demand for the new kind of literature in the Indian languages can be depended upon to create the necessary supply.

Thus there is a good case for adopting the mother tongue, or the regional language, as a medium of instruction at the university. But there is also an overwhelming objection to making it the sole medium of instruction at that level. For if this is done, academic life in India will be fragmented into as many parts as there are major regional languages in this country. This we have to avoid; it is essential that there should be a constant and lively exchange of ideas among different parts of the country. In view of the leading role of the universities in the development of intellectual life, it is extremely important that academics all over India should feel themselves as belonging to one and an indivisible community. This cannot be achieved if they are reduced to communicating with one another as they would with foreigners. There is a simple conclusion which follows. If we must have the mother tongue as a medium of instruction at the university, as I think we should, we have to have a second language with co-ordinate status which shall be common to all parts of India. The academic world in India must be bilingual. Some further clarification of this point is necessary.

When I say that academics in this country must be bilingual, I do not mean simply that they should understand one more language in addition to the major language of the region to which they belong. I mean that they should know these two languages well enough to be capable of expressing difficult and subtle thoughts in both. This, I think, is possible. In my own state, Bengal, most of our best poets in recent decades have shown a striking capacity to write high quality English in addition to their mother tongue. For the average writer this is perhaps the limit. It is not difficult for a person to gain some acquaintance with a larger number of languages; but it is a different thing to express oneself with ease on intricate matters, such as academic people have to discuss quite often. So students should learn as many languages, Indian as well as foreign, as they may find convenient; but it is very unlikely that they can learn more than two languages at the highest level of efficiency; and in the Indian situation it will not do to learn less than two. One of these should be the mother tongue, or the principal regional language. What should be the other?

I suggest that the other language should be English. Some would no doubt plead for Hindi. Hindi, it would be urged, is understood by a much larger number of people than English. This is quite true. It is a point in favour of Hindi; but there are a few points in favour of English too. We have to balance and decide.

From a strictly academic point of view the main question is quite simple. Will the pursuit of knowledge be better promoted by combining the mother tongue (or the major regional language) with English or with Hindi? For those whose mother tongue is Hindi the question may be put in a slightly different form. Will Hindi-speaking people gain more in the domain of higher education by adopting English as a second language or by adopting a second Indian language? Now, Hindi is about as developed as the other major languages of India, and no more. No doubt all these languages will further develop in future. But the two Indian languages will generally have less to learn from or through each other than any of these will have to learn through English. This should be quite evident to anybody who decides to consider the matter with a little minimum of detachment and with the requirements of education uppermost in his mind.

One incidental advantage of combining English with the regional language is worth explaining separately. We have earlier expressed our conviction that high-level textbooks can be written in the major languages of India: what is necessary is to create sufficient demand for such books by adopting the regional languages as media of higher instruction. But is there not a danger of standards of textbooks falling in the course of the transition? The retention of English side by side with the regional language will, in some measure, help to avoid this danger. Textbooks in English will serve as a continuous reminder of standards to aim at in the Indian languages. They will also make it possible for teachers of any particular subject to regulate the pace of transition to conform to the actual supply of books in the Indian languages in that subject. This is a service which Hindi, as an associate medium of higher education, cannot very well render to the other major languages of India, but English can.

As a development-seeking country, India will have to go out in search of knowledge to other more advanced countries in the coming years. One of the main tasks of people passing out of our universities will be precisely to keep abreast of the growth of knowledge in the world and borrow selectively for application in our country. This is a good reason for learning English well. Our past association with Britain puts us in an advantageous position in this respect, and it is not good sense to throw away this advantage out of nationalist pride. Those who argue for Hindi as against English often point out that it is easier for an Indian to learn Hindi. But this is to put the question in a wrong perspective. Hindi is no substitute for English. It is arguable that those who do not go in for higher secondary education should not be required to learn any foreign language at all. But those who receive higher education are generally required to learn a foreign language in other countries too. Our natural choice of a foreign language is English, although some may cultivate a few other languages too, depending on their special needs. An increasing number of scholars, even in Japan and the Soviet Union, are now learning English. But there they do not care to go much beyond a reading knowledge of the language. This is where our situation has no analogy to that of countries like Japan. In Japan the mother tongue is the common medium of instruction at all universities, while we need a special link language for different parts of our country. Comparison with the Soviet Union is also apt to be a little misleading. In point of development, Russian happens to enjoy an unquestionable superiority over most other languages of the USSR. Hindi does not enjoy the same kind of superiority in relation to the other developed languages of India. This makes our situation not exactly comparable with the Soviet. Hindi does not have the same educational value to a Maharashtrian, Bengali, or Gujarati as Russian has to an Uzbek.

Let us clearly recognize the limitation of English as a medium of instruction. English is not, and can never be, a medium of mass education in India. Only the mother tongue can be such a medium. Among peasants a majority remain more or less rooted to the soil, except for occasional journeys or pilgrimages. Their life's work is carried on in the mother tongue, which is the only language in which effective communication can be established with them. With the growth of education what they will need is not so much a common language of communication with distant parts of the country as an increasing supply of knowledge available in their own language. If it is still desired that the whole country should have some rudimentary knowledge of Hindi, this can be done by making Hindi compulsory study at some stage in school for a limited period. As a matter of fact, this is already the practice. But outside the Hindi-speaking areas it would not be advisable from a strictly educational point of view to adopt Hindi as the common medium of instruction at the university, since English would serve this purpose better for reasons we have indicated above.

Let us summarize. Mass education should be through the medium of the mother tongue wherever this is possible. The mother tongue should also be one of the media of instruction at the university, and so serve as a link between people of higher education with greater mobility and those who work at the base and have stronger ties with the soil. English should function as the common medium of instruction at the major universities and thus guarantee two things at the same time, viz. the internal unity of academic life of the country and uninterrupted intercourse with the rest of the world. At the same time, Hindi can be expected to function as a medium of instruction at all levels in Hindi-speaking areas. Outside of academic life it will have other functions too. Apart from its special status in the administration, it is and will continue to be a widely used language in day-to-day business, particularly at the urban centres. This is the arrangement which either exists at the moment or towards which things are naturally evolving. No sharp departure from this state is either necessary or desirable. It is only necessary to rationalize the present arrangement and make marginal adjustments, paying more attention to the development of the mother tongue, fostering greater general acquaintance with Hindi while, at the same time, adopting measures to check any decline in the standards of English. For the rest, the more important changes we need are in the methods and content of education rather than in the media through which education is imparted.

As an alternative arrangement we can make Hindi and the mother tongue twin media of instruction at the university. I do not regard this arrangement as impracticable. I simply consider it an inferior arrangement. English, coupled with the mother tongue, will exert a continuous uplifting pull on the regional languages, while the alternative combination may easily breed cultural stagnation. What was at fault with our old system of education is not that we accepted English, but that we very often neglected the mother tongue. To the extent that the mother tongue was not neglected it was obviously enriched through association with English. The immense progress in Bengali literature in course of the nineteenth century must be largely explained in these terms. I understand that this is also true of other Indian languages, though I am not competent to speak about them. The frictions involved in making Hindi a medium of instruction at the university, say, in the Tamil-speaking part of India will also be much greater than in installing the mother tongue beside English. Indeed, the very attempt may sharpen regional animosities. The price will not be worth paying—certainly not from the educational and perhaps not from any other point of view.

At this point it may be in order to talk of some institutional arrangements which will help to give effect to the ideas we have presented above. We have suggested that the regional language as well as English be adopted as media of instruction at the university. Does it mean that in some universities instruction should be given in the regional language, and in others in English? Or is it the idea that both languages should be used at the same university? Logically it should mean the latter, for our intention is to produce scholars who would be able to express the highest ranges of thought both in the mother tongue and in English. But India is a big country and we have scope for variety. So we may have some universities where the regional language will be the sole medium of instruction. Presumably these will be universities of lesser importance, since their scholars will find it difficult to communicate with fellow scholars in other parts of the country. But then why have such universities at all? Now, some people who started life in a modest way and did not go in for higher education might develop strong intellectual interests later in life, and it should be possible for them to receive higher education without their being obliged to learn English. Even they should perhaps be encouraged to acquire mastery of the common medium of academic learning in the country, but there should at least be the possibility of acquiring higher learning in the special field of one's interest without mastering English.

There may be other universities where English would be the sole medium of instruction. Now, why should we have universities of this kind? This is because as soon as we make English and the regional language the media of instruction at the university in any particular region, we make admission to the university difficult for students from other regions. We should have some universities where students can come and study from the four corners of the country. In such universities the only medium of instruction should be the common medium for the country as a whole.

Thus we may have some universities which will adopt either English or the mother tongue as the sole medium of higher instruction; but these will be exceptions. The typical university in India should adopt English as well as the mother tongue as the twin media of instruction. It may be useful to dwell briefly on some practical implications of this arrangement.

What does it mean to have a subject taught in two languages? Of course, the formula will have to be relaxed in some cases. Sanskrit need not be taught in English! Lectures on English literature may be in English alone. But what about the other subjects? If the arrangement we have recommended is adopted the teacher should have the option of delivering lectures either in English or in the regional language. And students should have a similar option in writing answers to questions. But how can we ensure that the option will not tend to be exercised by all in the same direction? And by what institutional arrangement can we keep alive in the minds of the teachers and the taught the deeper significance of this academic bilingualism?

To achieve an inner sense of community among universities all over India it is not enough to provide them with the bond of a common medium of instruction. It is useful to have such a common medium, but something more is necessary to achieve a lively sense of community. This is not the place to suggest all sorts of measures to this end. But there is something we can take up here because of its close bearing on the question under discussion. There is not enough exchange of university teachers among different parts of India. This is unfortunate. In this matter we should take example not by the British tradition, but by the American. Any observer of the American academic scene must be impressed by the high degree of mobility in that country. For a country of such large dimensions this is very useful. We need something similar in India. If it does not come about spontaneously, it should be specially aided and assisted. The Union Minister of Education has already spoken of an all-India Education Service. At the university level something more is desirable. A programme of rotation of teachers among the leading universities of India may be drawn up and, if necessary, aided by the University Grants Commission or some such competent body. Teachers from one university should visit another; they should give regular courses and not simply a few occasional lectures. To facilitate the process, leading universities should have special housing facilities for guest professors. Other incentives, such as temporary displacement allowance, may also be provided, if necessary. Something of the kind exists for guest professors from abroad. But we need regular exchange of professors within the country. In this way currents of thought in one part of the academic world can make their impact felt in other parts.

This programme of rotation of teachers ties up nicely with the idea of academic bilingualism. Guest professors will be expected to use the common medium of instruction for the whole country. Local teachers, on the other hand, will be free and even encouraged to lecture in the regional language. In addition, the university should arrange extra-mural classes on all sorts of subjects, consulting in this regard the interests of people in the neighbourhood. This is one of the best ways of extending knowledge beyond the precincts of the university and making the neighbourhood take interest in the work of the university. The extra-mural lectures should be in the regional language wherever possible.

In bilingual universities some problems of adjustment are bound to arise from time to time, but these should not be insuperable. For instance, guest professors cannot be expected to know the regional language, which may create some small problems. But if the students are bilingual in the relevant sense of the term, there should be no great difficulty. Students may be required to answer papers taught by guest professors in English while they are allowed and even encouraged to answer other papers in the regional language. Or some other working arrangement may be adopted. If the basic idea put forward finds acceptance, problems of implementation will not be so difficult that they cannot be solved with some skill and ingenuity. It is the basic idea that matters. The typical university in India should have roots in the region where it is situated, while it stretches out its arms to other parts of the country and looks beyond our shores in search of knowledge. The simultaneous acceptance of the regional language and English in an Indian university will be a sign and a consequence of its resolve to retain its regional roots as well as its wider links. If this is to be the order in our typical university, there must still be variations as explained above. For no single form may meet all our needs.

THE UNIVERSITY AND THE RURAL COMMUNITY

T. Barnabas and *S. K. Hulbe*

ALBERT MAYER[1] who is considered the inspiration behind India's Community Development Movement made an observation which reflected on the state of education in India in 1955. He said, 'Almost three years have passed since the first community projects started. In the face of these facts, we are still not getting any better qualified men from our secondary schools, colleges, and universities. The meagre training we are able to give them in our own centres must still start from zero, so to speak. There are still too many B.Sc.'s and M.A.'s in Physics, Economics, English who have trouble finding work, and we have trouble in trying to use them. At this late date we should no longer need to try to create in six months or four months a social education worker out of a man who has known nothing about it previously; or a rural agricultural worker out of an M.Sc. in agronomy who has not had some extension training and practice at college. Their education should fit them more closely, and training camps should only need to supply the finishing touches. . . . We should at once start equating the educational programme or syllabuses of our secondary schools, colleges, and universities to our field requirements.'

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[1] Albert Mayer *et al.*, *Pilot Project, India* (Berkeley: University of California Press, 1958), p. 327.

Nearly a decade has passed since Mayer made this plea for making education relevant to the demands of our developing society. During this period universities have increased from 27 to 55 and the number of colleges have increased from 772 to 2,111. It is estimated that the number of students at the university level will have increased by 4 lakhs by the end of the Third Plan. During the Fourth Plan the estimated increase in students is put at 6 lakhs. Thus the total number of students at the university stage at the end of the Fourth Plan will be 19 lakhs.[2] This phenomenal growth in the institutions of higher learning witnessed in India during the past decade is undoubtedly without precedent. And yet it is a sad commentary on education in India that it still remains irrelevant to the demands of our rapidly changing society.

It will not be true to say that there is a general unawareness or apathy concerning the state of education in our country. However, there seems to be no one opinion on what is basically wrong with our system of education which has failed us so miserably in providing the human resources essential for a developing economy such as ours.

The relation between economic growth and education was well expressed by Dr Howard Bowen, President of Iowa State University, in his college day address at Ahmednagar College. He said: 'The economic growth of a country, of course, is based upon its natural resources, its land, minerals, and forests and also based on its capital, its technology, its enterprise and its labour. But these things reduce largely to the people. Land, after all, is a launching pad or platform on which economic progress takes place. Capital consists of goods that are made by people largely through the discipline of saving and producing for future purposes. So capital is a human factor of production that derives from human activities. Technology is knowledge in the minds of people, so again it is a human factor. Enterprise is a human trait, and labour, of course, whether skilled or unskilled derives from people. And so, it seems to me, the main economic resource of a nation is its people. And what is needed for a growing, thriving, progressing nation is a group of people who are literate, healthy, motivated, socially integrated, enterprising, in command of technology and skill. . . . This is the purpose of education. Therefore, *education at all levels is the crucial factor* in economic growth.'[3]

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[2] Professor Sunil Banil, 'Education in India', in *AICC Economic Review* (Special Durgapur Congress Number), 6 January 1965, p. 113.

This perspective on education is all pervasive and underlines the need for a serious evaluation of our educational policy, which, it would seem, has been purposeless and concerned with exterior renovations rather than reform of the system. During the past decade numerous changes have been made in the statutes, rules, and regulations governing university education. But the content of education remains the same. An outstanding example is the recent switch-over from the four-year to the three-year degree course. The student still puts in four years to get a degree, but the first year is now considered the pre-university stage and the Inter is now the First Year or the Pre-professional. It seems to matter little to the policy-makers of our country whether the education that is being offered is relevant to the needs of our society or whether the student-teacher ratio can

[3] *Ahmednagar College Annual,* 1963-64, p. 5.

be improved. The change has increased the number of examinations the students have to take but it seems to be of little consequence that our educational system is already disturbingly examination-oriented. The spread of education is accepted as the first principle of making democracy a reality in our country but there seems to be a painful lack of awareness that our educational institutions are alienating our students from the society, encouraging mediocrity, snobbery, and vulgarity. Our university education seems to have no purpose and no mission to fulfil.

It can be stated that the university has four main missions: the preservation of knowledge, the extension of knowledge, the training of professional workers, and finally the social mission. While our institutions of higher learning may be aware of the first three of these missions there seems to be no understanding of the social mission of the university. Universities can adopt a number of approaches in their attitude towards society. The most common approach is the 'ivory tower' approach. This approach implies that knowledge should be sought for its own sake and that there is no need for any communication between the intellectuals and the general masses of society. Universities in India can ill afford to adopt this approach.

In an underdeveloped economy, such as ours, it is the mission of the university to diffuse knowledge throughout the society. Moreover, the social mission of the university implies a living interest in the society of which it is a part. It implies a study of its problems and its aspirations. It implies the duty of creating responsible citizenship, able and effective leadership, and well-informed and efficient personnel to undertake the responsibilities of our developing economy. In many instances the university itself will have to participate directly in the task of nation building in order to fulfil one or several of these objectives.

Colleges which are situated in rural areas are faced with some special responsibilities concerning the social mission of the university. It is a common complaint that college education tends to alienate the students from the rural areas. This trend is not peculiar to India. However, at this stage of development special efforts should be made to encourage our educated youth to return to the villages or to accept responsibilities in the administration which call for their staying in rural areas. The lure of the large urban centres is understandable; but it should not be considered the only reason why the educated youth are weaned away from the villages. One reason for this trend is the inability of the students to project themselves as useful and responsible citizens in the rural areas. This situation is created largely by our faulty educational system. The fixed rigidity of the disciplines taught and the conservatism of the university leaves little scope for colleges to plan educational programmes suited to meet the needs of their students. This causes the student's interest in education to waver and the immediate object of his study turns to passing the examination. This ultimately leads to frustration on the part of students and faculty alike and a wastage of precious human and material resources. This situation is particularly true of the Arts sections of our universities. It is, therefore, the responsibility of the colleges, in rural areas in particular, to offer a programme of education which will be meaningful and useful to the students. This programme should include an opportunity for the students to study and involve themselves directly in the developmental programme of the area. This will enable many of the participating students to project themselves in some useful role in the rural areas.

Universities in India have made some notable contributions to the study of society. In particular, numerous studies are now appearing in rural sociology and economics. However, the role of the universities in the field of development and training in Community Development and Extension is being disputed. The government is anxious for colleges and universities to be directly involved in community development. Accordingly, the scope of the Planning Forums in the various colleges is being extended to include 'constructional' activities such as *shramdan,* social education, adult literacy, and initiation of various community projects. The attempts towards involving universities and colleges in the developmental programme of the country at all levels, planning, implementation, and evaluation, are most encouraging. Through the mutual influence of the university and the community on one another the quality of living and learning should significantly improve. However, unless the activities of the universities in the practical field of development become an integral part of its educational programme they will cease to have any significant and lasting academic value and will not be taken seriously by either faculty or students.

There is another aspect of the social mission approach that needs to be considered. By integrating itself with the community the university will be fulfilling a mission towards itself. The extension of the university into the rural areas will create a sense of value and respect for higher education in the minds of the rural masses. They should feel that their sons and daughters, whom they send to the colleges and universities at great personal sacrifice, are acquiring the knowledge, skill, and ability which will eventually release them from the vicious circles of ignorance, poverty, and squalor. Secondly, the college or university situated in the rural area will be creating a favourable climate for its research programme through its extension services. The services that the college or university renders may quite legitimately remain secondary to its study and research programme. However, the service programme of the university can provide a very useful field laboratory to keep in direct touch with the problems and needs of the society. The university or college can provide the channels through which new ideas can be tried out. One of the greatest weaknesses of present-day university research in community projects is its inability to assert its findings and results with the authority of practical experience. This can be mitigated by the universities and colleges adopting a 'theorist's' as well as an 'activist's' role in its study of the community.

While there is a growing consciousness among our thinkers for the need to make education relevant to the demands of our society it will be a long time before such a system of education evolves. In the meantime educational institutions of our country must experiment within the existing pattern and structure of our educational system to find ways to meet the needs of society. Sufficient scope should, therefore, be given to those colleges and universities which are willing to make such experiments and resources should be found to encourage them.

The Rural Life Development and Research Project of the Ahmednagar College is one such experiment aimed at fulfilling the social mission of the university. Through its threefold programme of study, research, and participation, it aims at developing character and moral and technical competence which naturally constitute the basic essentials for the success of the national programme of development. It aims at providing workers capable of fitting into the administrative pattern of community development and co-operation. It aims at making education more meaningful to the students of this college. Though the Project is not an integral part of the educational programme of the University, it is considered by the College as an arm of the social sciences extending to the rural areas thus establishing a strong academic interest and bias to the whole undertaking. After four years of its existence, the Project has imparted a uniqueness to the educational programme of the College. It can confidently be said that there has been a definite improvement in the teaching and learning, especially of the social sciences, due to the direct confrontation and involvement, of both faculty and students, with the problems of the surrounding society.

The programme and achievements of the Rural Life Development and Research Project of the Ahmednagar College have been presented in a booklet, *New Horizons in University Education,* published by the College. The Rural Project of the Ahmednagar College now extends to thirteen villages surrounding Ahmednagar. Activities of the Project cover practically all aspects of development such as agriculture, co-operation, education, social education, adult literacy, health, and industries.

Over the past four years the Rural Project has initiated a programme of soil conservation covering the total agricultural area of two villages. It has also introduced new and scientific methods of cultivation in these villages. It has been responsible for spreading the use of improved seeds, fertilizers, and insecticides in the villages. During the summer of 1964 the Project organized a farmers' rally which drew a tremendous response from the farmers of the villages. This rally has been responsible for further bolder programmes of the Project. In the field of co-operation the Project has been responsible for starting four societies: a credit society, a co-operative farming society, a co-operative poultry society, and a co-operative processing society. The co-operative processing society is a novel experiment in organizing human and material resources for progress. Its uniqueness lies in the fact that the society aims to take up total responsibility for the development of all villages. An organization at this level which is one step below the Panchayat Samiti and one step above the Panchayat is capable of planning more effectively and precisely for development. Such an organization is also capable of mobilizing its own human and material resources to fulfil its plans. An example of the potentialities of such an approach is the manner in which these villages were able to raise Rs 15,000.00 within a period of two months for the society despite near-famine conditions in the area. The unity of purpose which is so evident in these villages today is a consequence of the college activities in these villages which have, quite unconsciously, bound them together into a single cohesive unit.

In the field of education, the Project has participated actively in the adult literacy drive and the *gram gaurava* programmes. The Project has also been instrumental in mobilizing the resources of the people for school buildings, equipment, and libraries. The film unit of the Project visits the villages at regular intervals and shows films made available by the government. In the field of Public Health the project has experimented successfully in running two weekly clinics in two villages. The approach adopted by the Project to the medical extension programme was to establish, through the Gram-panchayats, clinics which would, in due time, be self-supporting. It was believed that once the feasibility of such a programme was demonstrated and its benefits became obvious to the people, the villages would be prepared to undertake more and more responsibilities of running the clinics. These expectations have been more than justified as both the clinics are now run by the panchayats.

The work of the Project among the tribals has attracted a lot of attention. The Project has succeeded in rehabilitating an ex-criminal tribe. The Project drew the attention of the government to the plight of these tribals and secured for them a centrally sponsored scheme for the rehabilitation of criminal and nomadic tribes. It took over the complete responsibility of its execution and has been carrying on follow-up work. Similarly, government forest land was acquired which the tribals are now cultivating. The Project was also able to get the Land Development Bank of the District to finance reclamation and land development work. The Project has also started a school for the children in the colony. When the Chief Minister of Maharashtra State visited this colony he donated Rs 15,000.00 from the Chief Minister's Fund to the Project.

The achievements of the Rural Life Development and

Research Project are many. But it must be emphasized that the role of the college is to act as a catalytic agent. By no stretch of imagination can it be assumed that an Arts and Science College such as the Ahmednagar College is the repository of all expertise essential to solve the problems of rural India. But there is no doubt that a college or a university is favourably situated to draw upon available resources and expertise available through the various government and private sources in the district. It is with the aid and guidance of these experts that the Ahmednagar College has been successful in its development programme.

The problem of development, in most instances, can be reduced to that of the organization of communities to avail themselves of the various opportunities extended through the government development schemes and to ensure their proper utilization. The colleges and universities are ideally situated to organize the village people towards this end. One of the important achievements of the Project has been its ability to win the confidence and support of both official and non-official members of the district administration. The Project has also drawn an unbelievable response from the rural folk. This is an indication of the degree to which the college has been able to integrate itself with the community. This may be considered as the pre-condition for a successful programme of university extension.

Practical experience in the field of community development reveals the extreme complexity of forces involved in the processes of change and development in the Indian village communities. To initiate change requires skills in human organization and social engineering rare in our country today. It also calls for a sympathetic understanding of the problems of our rural community for which we do not seem to have the patience. Intensive study and training in community development in greater depth is obviously an urgent need today. In India, community development is emerging from the 'movement phase' of emotional appeal in its development to the 'institutional phase' of purposive and scientific application. If community development is to become a significant and effective national institution, far more efforts will be required to examine the whole concept of community development in the context of the village communities. In short, there is an urgent need for educational institutions to include community development as one of their important areas of study. The Rural Life Development and Research Project of the Ahmednagar College has made a beginning towards this end. Students desirous of participating in the Project are required to make an intensive study of the concept of community development and its implications in the context of the Indian society. They are also required to study the principles and methods of extension. Special courses are offered for those students who desire to enter the field of co-operation. Provision is also made for introducing them to such specialized fields as agronomy, animal husbandry, and public health. About thirty to forty students enrol for the study programme and participate in the various programmes of the Project.

Sociological and economic research are an inseparable aspect of the study programme offered by the Rural Life Development and Research Project. Studies in community development will have to be supported by research. Research is required to elucidate the numerous variables involved in this dynamic social phenomenon. This social phenomenon is an extremely complex process involving many direct and indirect relationships affecting the totality of human existence. The universities and colleges must therefore take the lead in collecting, describing, systematizing, and presenting in perspective the different goals, methods, and results of our community development programmes. Because the university or college occupies a relatively neutral position, it is perhaps the only institution capable of providing systematic evaluation of (1) the community development programme, (2) methods, and (3) patterns of development within the area.

The research programme of the Rural Life Development and Research Project is aimed at meeting these objectives. The socio-economic studies of the villages have helped in understanding the nature and structure of the village communities in which we work. The research programme is helping the students and faculty to discover the nature of prevailing leadership, the effective channels of communication, and the processes of decision-making in the villages. The first research study of the Rural Life Development and Research Project was published in 1964 under the title *Samaj Vikas Ani Bharatiya Gramin Samaj*.[4] The Project is now conducting a comprehensive and intensive survey of the development of the district over the past ten years. This survey will be a spring-board from which we should be able to make substantial contributions to the study of community development, and in general, the processes of socio-economic development in rural India. In addition, the survey which is being conducted with the co-operation of the Zilla Parishad, should provide guide-lines for systematic planning for the district in the future. Similarly, the Project is making a study of the problems of co-operative marketing in this district. The work among the tribal communities has offered an opportunity to study their peculiar problems. A study of the problems of their social and economic integration is now under way.

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[4] M. K. Hadbe, *Samaj Vikas Ani Bharatiya Gramin Samaj* (Poona: Venus Prakashan, 1964).

The Ahmednagar College, through the Rural Life Development and Research Project, has done pioneering work in university extension. The explorations of the Ahmednagar College in the field of community development and the rich experience gained over the past four years are encouraging the college to try out a wider programme in the form of an Institute of Community Development as an integral part of the educational programme of the University of Poona. However, it is quite obvious that to start such an institute resources will have to be found. In this context, the establishment of an Education Commission is a happy augury for education in India today. The Commission is entrusted with the task of making recommendations which will enable the educational institutions to fulfil, among other things, their social mission. This resolution of the Government of India of 14 July 1964, asks the Commission to recommend measures for realizing 'a well balanced, integrated and adequate system of national education, capable of making a powerful contribution to all spheres of national life.'[5] It is hoped that the Commission will, in its recommendations, provide opportunities for such experiments as are being done by the Ahmednagar College.

A quotation from *The Environs of Tagore*, by Hashim

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[5] Sunil Banil, *op. cit.*, p. 113.

Amir Ali expressing powerfully the urgent need for incorporating an Institute such as envisaged above in the regular programme of the universities in India will be an appropriate conclusion to this article. He writes:

'The chief reason for almost all attempts at rural development sponsored by the educated classes turning out into fiascos is the unfamiliarity with the village conditions. Even those among the staff and students who venture into the villages soon tire and turn back because they find themselves in unknown and uncharted environment. . . . If we can only incorporate this activity into the recognized programme of each and every one of our Universities; if we can make each and every one of our University students come into contact with the problems of the villages in the neighbourhood of the University through regional surveys; if a hundred square miles around every University can become its laboratory for the study of ourselves and our environment, we will have gone a long way in turning the tide of our education which is now flowing towards a precipice.'[6]

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[6] Hashim Amir Ali, *The Environs of Tagore* (Bombay: Asia Publishing House, 1960), p. 116.

EXAMINATIONS AS A CREATIVE AID IN UNIVERSITY EDUCATION

H. J. Taylor

THE KEY WORD in the above title is 'creative'. A creative process is one in which something new emerges, perhaps new knowledge or understanding. Examinations at their best are creative in this sense, for they produce new information, not otherwise available, on the basis of which certain necessary judgements must be made. These judgements relate, firstly, to the effectiveness of the educational process to which students are exposed, and secondly, to the intellectual achievement of individual students. These two purposes are not always clearly distinguished, and a given technique of examination is not necessarily equally appropriate for both.

There is nothing new in the idea that the examination is an instrument for evaluating not only the individual student but also, in some sense, the quality and efficiency of the education. Indeed, the widespread criticism of the present standards of education is largely based on examination results. According to figures published by the U.G.C.[1] for the years 1951-60, the average pass percentages for the whole country, in four main examinations, were as follows:

I.A. 43.1%, *I.Sc.* 42.9%, *B.A.* 46.9%, *B.Sc.* 47.9%

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[1] U. G. C. Report on Examination Reform.

The corresponding figure for the initial selection examination, Matriculation or School Final, is not known accurately, but is believed to be about 40%. Examinations may be thought of as filters, filtering out those who cannot cope with the exacting demands of university education. If the first filter is efficient it should at once remove a high proportion of the unsuitable. Of the rest very few should then be held back by the second filter and almost none by the third. We might then expect the pass percentages in consecutive examinations to be, say, 40%, 80%, 90%, instead of the 40%, 43%, 47% actually observed.

The actual pass percentages are very low. The chance that a student will pass the three examinations consecutively, without failure, is only 8%. This means that of every hundred students who begin the race by appearing for the School Final examination, not more than eight pass the winning post. A few others limp in later after one or more failures, but the 'wastage'—however we may define it—is of the order of 90%. The corresponding figure in the U.K. is about 15%. On this evidence it is customary to base the judgement that the education provided is very poor, but this inference is only valid if the examinations are providing accurate information. If this condition is not satisfied the figures may still tell us something about the examination, but are not likely to tell us much about the education.

There is reason to believe that our present examinations are indeed very inaccurate. A low pass percentage is an almost invariable feature of undergraduate examinations in all our universities, and it is difficult to avoid the conclusion that it is, so to speak, a 'built-in' feature.

We may almost define the conventional examination as an instrument designed to reject at least half of any material presented to it. If this is so the pass percentages require no further explanation, but it is obviously not possible to deduce from them any valid inference about the quality of the education.

A high failure rate built into the examination must, almost inevitably, imply a large element of chance. If the results were decided by tossing a coin the pass percentage, apart from statistical fluctuations, would always be 50. If it were decided by throwing dice the pass percentage might be higher or lower, but would have some constant value. Probably no examination is governed entirely by chance, but there is a great deal of evidence to suggest that in examinations of the conventional type chance plays a large and sometimes predominant role.

Correlation studies enable some estimate of the incidence of chance to be made. If the examination measures something objective with reasonable accuracy, two successive examinations on the same theme, applied to the same candidates, should be highly concordant. Actually very few correlation studies have been made in India, and more research needs to be done. It would also be advisable to arrange some of the major examinations in such a way that their reliability could be checked by the divided-examination method, but this also does not seem to have been done anywhere in India. A few years ago a short report[2] was published in which correlations were worked out between theory and practical marks in Physics and Chemistry for a group of 120 third-year College students. The correlation coefficients were as follows:

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[2] U. G. C. Report on Examination Reform. Appendix, 'The Marks of Examiners'.

Physics theory *vs.* Physics practical ..	$r = 0.14$
Chemistry practical *vs.* Physics practical ..	$r = 0.14$
Physics theory *vs.* Chemistry theory ..	$r = 0.30$

The last correlation was affected by the presence of two very poor candidates who scored zero throughout, and who should probably not have been in the class. If they are omitted the correlation falls to 0.20. Since the standard error of these determinations is about 0.10 the values of r do not differ significantly from zero. The following conclusion was drawn: 'If the marks are valid measures of ability one must conclude that there is no appreciable connection between practical and theoretical ability in Physics, none between the two practical abilities, and none between the two theoretical abilities. Such a conclusion is surely unacceptable, and the only alternative is that the marks are not valid measures at all. They can only be regarded, in fact, as sets of random numbers.'

The above is, doubtless, an extreme case, but if examinations are to become valid and reliable, chance must be eliminated wherever possible. At what points in the process does the chance factor enter? There appear to be four: (1) the formulation of objectives, (2) the design of papers, (3) the allocation of marks, (4) the combination of marks. It may be useful to discuss each of these separately:

The formulation of objectives.—The fundamental uncertainty in our present examinations is that their purpose is in doubt. An examination is at once a selection mechanism and a measuring instrument, but the precise quality which is being selected or measured is seldom clearly specified. The paper-setter and the examiner are both in doubt whether the marks are intended to measure the candidate's factual knowledge, the depth of his understanding, his power of judgement, his capacity to solve problems, or any of a dozen other things. An instrument intended to measure the pressure of the air must respond to this property only. If it responds equally to variations of temperature and humidity no reliable measurement can be made. Before designing an instrument a physicist must first know what property is to be measured, and must adapt the design accordingly. The conventional examination is necessarily inaccurate because this fundamental condition is not fulfilled. Until the universities learn to ask the question 'What is this examination intended to measure?', and until they find an answer to it, examination results, be they worked out ever so carefully, will continue to be surrounded by a fog of vagueness and uncertainty.

The design of papers.—Once the objective has been defined, the question paper must be designed to measure it with some approach to accuracy. Most question papers at present are not designed at all, but simply repeat established conventions. It cannot be too strongly emphasized that the design of a measuring instrument is a job for an expert technician, and this is as true in education as in technology. Indeed, as Sir Eric Ashby points out, education *is* a technology, which demands as much expertise as any other. A research chemist is not expected to design a chemical balance, nor do Olympic winners make the stopwatches which measure their performance. In these fields it is recognized that measurement and the design of measuring instruments require specialized skills. In education this truth has not been sufficiently recognized. The academic bodies which prescribe syllabi and examinations seldom have any technical assistance, and paper-setters are chosen almost entirely for their academic qualifications. It is taken as almost axiomatic that if a man has shown brilliance in some intellectual field he is *ipso facto* qualified to examine in that field. This is a fallacious assumption which should be abandoned.

Without departing unduly from the present pattern of examination, the paper-setter has several variables at his disposal. He can vary the content and verbal construction of the questions and also, within limits, their number, and he can vary the range of choice to be offered to the candidate. A study of contemporary question papers shows that even these limited freedoms are not exploited to full advantage. Questions fall into a stereotyped pattern, which tends to encourage the art of 'question-spotting' amongst candidates. Candidates study the papers of previous years in order to predict the contents of the next paper, a practice rather to be commended than condemned. So far from being reprehensible, it can be a most interesting game, which can afford useful intellectual exercise. The trouble is that students usually play the game very badly, giving far too much attention to 'tips' offered by their teachers and others. When it is based on a careful frequency analysis of questions and question types, considerable precision is often possible.

It is an arguable point whether a question paper which is predictable can be a useful measuring tool. A far more serious matter is that the answers are also predictable, as every examiner knows. The stock question automatically provokes the stock answer, and stock answers can be memorized in advance. There is nothing wrong, of course, in memorizing useful material; it is a very necessary part of education. But the stock answer encourages the memorization not only (or even chiefly) of useful material, but also of forms of expression, of views, opinions, and judgements, which are not the candidate's own. There is no more certain way of encouraging the decline of critical judgement and original thought.

Such considerations suggest that the setting of question papers should not be governed by the present conventions, which often result in very poor designs. Nor should papers be drawn up, as at present, by a large number of individuals who are offered little guidance and no technical assistance. A university should have a highly competent technical board to deal with such matters. The design of question papers is no less important than the design of buildings and laboratories, which no one would dream of leaving to amateurs, however eminent in other spheres.

The allocation of marks.—Marking is a mode of measurement, and a mark is essentially a measure number. Marking differs from the measurements familiar in Physics and other sciences chiefly by being relatively imprecise, but it must be remembered that even in the physical sciences there are enormous variations in the precision attainable. The astronomer measures the mean period of the moon with an uncertainty less than one part in a thousand million, but the distance of a faint galaxy may involve an uncertainty of a thousand per cent. Nevertheless the same principles of measurement apply to both. If marks are measurements they should be handled by the standard theory of measurements and errors in spite of the fact—or more accurately, because of the fact—that they are necessarily imprecise.

Some of this imprecision arises from the faulty design of papers, some from faulty techniques of combining marks and assessing results, and some from intrinsic uncertainties in the process of marking. The examiner estimates the merit of a script against a more or less clearly defined scale. Usually the scale exists only in his mind, but it may be objectified by selecting specimen answers corresponding to each degree of merit. When different examiners mark the same (or equivalent) sets of scripts independently we can compare the scales of the examiners. A recent study[3] has shown what large differences exist. The study covered a complete Matriculation examination of 35,000 candidates. The scripts were randomized before distribution to examiners, so that in each group of some twenty examiners all the bundles of scripts were statistically equivalent. There were altogether 67 such groups. The median mark of each examiner was taken as a measure of his average standard of marking. The range of variation of this median within a group of examiners averaged 16.7, the greatest range being 34 and the smallest 8. The differences between examiners were shown even more strikingly by the variations in the pass percentage. Within a group of examiners the difference between the highest and lowest pass percentage was never less than 26, reached a maximum of 85 and had an average value of 42. This means that with equally qualified examiners marking closely equivalent bundles of scripts it is possible, and

[3] H. J. Taylor, *Operation Passmark*, University of Gauhati.

indeed quite common, for one to pass 90% of the candidates where another passes, say, only 25%.

These differences between examiners naturally give rise to considerable errors, since it is a matter of chance whether a script happens to go to a high-marking or to a low-marking examiner. These errors can be removed, or at least considerably reduced, by randomizing the script and scaling the marks to a common norm. Many universities attempt to control the standards of examiners by appointing head examiners, who review the marking of sample scripts. This is not a method to be recommended, and it does not usually result in a satisfactory normalization of standards. Indeed, it may sometimes increase the very errors it is intended to remove.

When differences of standard have been corrected by scaling, the intrinsic errors of marking remain. Broadly speaking, these are of two main kinds, which we may call (*i*) errors of estimation, and (*ii*) sampling errors. Errors of estimation arise whenever the examiner has to make a judgement of value, as opposed to a simple decision between right and wrong. If an answer deserves 5 marks the examiner may give it 4 or 6, or, less probably, 3 or 7. There is reason to believe that these errors follow, at least approximately, the normal distribution, and that the standard error of the total mark, on a conventional paper of the usual type, is in the region of 7%.

When a question paper is of the objective type there should be no appreciable errors of estimation, but sampling errors are still present. The paper usually represents only a small sample of the whole field of knowledge covered by the examination, and the candidate may well find a higher or lower proportion of questions which he can answer than would correspond to the true range of his knowledge. Moreover, with multiple-choice items, the candidate increases his score by guessing when he is not sure of the right answer. It is customary to apply a statistical correction to the scores to compensate for guessing, but it is often forgotten that the correction is only statistical, and may be very wide of the mark in individual cases. Since the correction subtracts more from a small score than from a high one the process increases the spread of the scores, and also increases the standard error of any particular score. The correction, in fact, imports an additional uncertainty into the scores, and from many points of view it would be preferable to evaluate the performance of the candidates on the basis of the raw scores.

To illustrate, consider an objective paper of 50 questions, each question offering four choices of which only one is correct. Assume also that the candidate knows exactly half of the material, so that for any question taken at random the chance that he knows the correct answer is half. Assume further that the candidate guesses whenever he is not sure of the right answer, the probability being 1/4 that his guess is right. A detailed calculation shows that under these circumstances the most probable score is 31, but there is a 47% chance that the error is at least 3, 31% that it is at least 4, 19% that it is at least 5, 11% that it is at least 6, and 5% that it is at least 7. Approximately, this may be represented by a standard error of $3\frac{1}{2}$ marks, or 7% if the marks are referred to a total of 100. It is not always appreciated that the marks of objective test papers may be just as inaccurate as the marks of conventional papers, unless the former are very carefully designed and include a very large number of items. It is salutary to remember, in these days of examination reform, that we do not necessarily achieve precision by substituting one kind of examination paper for another.

The combination of marks.—Most examinations culminate in a vast array of marks in a tabulation register. Each candidate is assigned half a dozen or more of these numbers, which purport to measure his performance in a series of subjects, but this is not the end of the matter. A single criterion is required as a measure of his performance in the whole examination, and the marks must therefore be combined in some way. This is almost invariably done by the simple process of adding them together. The total mark then becomes the final criterion of excellence, accepted so widely and carrying such an aura of authority that it may still be decisive in appointments and promotions thirty or forty years later.

To add a set of numbers seems a straightforward and obvious thing to do, but it is full of pitfalls for the unwary. An examiner in English will give 55 to a very good candidate, 40 to an average candidate, and 25 to a very poor one. An examiner in Mathematics, however, will give 80, 40, and 0. Both examiners have the same average mark, but the mathematics marks are spread more widely. Candidate A, who is very good in English but bad in Mathematics, will thus get 55 and zero, with a total of 55. Candidate B, who is bad in English but very good in Mathematics, will get 25 and 80, with a total of 105. Now these two candidates are clearly on the same level, for there are two subjects of equal importance and each has one good and one bad subject. But the result of the examination is that B gets a good II class while poor A ignominiously fails. This is a simplified example of what happens all the time in conventional examinations. Even though two sets of marks are of the same average level, and the maximum the same for both, the result of adding them may be wildly erroneous. This can only be avoided by scaling the marks to the same standard deviation before adding them, a precaution which is seldom or never taken.

When the pitfalls are avoided it may be legitimate to add marks together, but even then not as absolute numbers. All marks, whether arising from objective or conventional papers, have a penumbra of uncertainty, specified by a standard error which may well be as large as 7%. The errors of individual marks are of course unknown, but we do know, at least roughly, the probability that the assigned mark differs from the true mark by any given amount. If the pass mark is 30 and the candidate gets 35 it is by no means certain that the candidate really passes, since it is possible that the mark is seriously overestimated. If the standard error of the marking is 7, the probability that the candidate would have passed on true marking is in fact 78%.

From this point of view no set of marks can give complete certainty that a candidate has passed in all subjects, but we can calculate the probability that he has done so, making reasonable estimate of the standard error of marking. This is called the 'passing probability', and it provides a much better criterion for passing or failing than the raw marks. In the following example the pass mark is 30, and the two candidates get marks as follows:

Candidate A ..	30	30	30	30	30	30
Candidate B ..	50	47	40	38	29	22

On the usual criteria A would pass and B would fail, but if we assume the standard error of marking to be 7 the passing probability works out at 2% for A and 6% for B. These, it must be remembered, are the probabilities, on the given evidence, that the candidates would have passed in all subjects if the marking had been free from error. It is thus more probable that B rather than A has satisfied the conditions of the examination. B is, thus, a more deserving candidate than A.

A fuller discussion of the probability method for determining examination results has been given in a previous paper.[4] It provides a rational solution to the problems presented by border-line cases, and has already been adopted in several universities.

Much remains to be explored in this general field of the combination of marks. It is often taken for granted that the only way of combining numbers is to add them together, but there may be other and better ways of establishing a single figure of merit, to denote a candidate's standing in the examination as a whole. There may also be cases where no such figure can properly be derived at all. The best estimate of the size of a room is found, not by adding the length, breadth, and height, but by multiplying them. The meteorologist measures the pressure, density, temperature, and humidity of the air, but he cannot form a figure of merit either by adding them together or multiplying them. Is there then any reason for adding marks in Sanskrit to marks in Chemistry, if the attributes measured by the marks are essentially different things? One might, indeed, regard measures of attainment or ability in different subjects as co-ordinates in a kind of academic phase-space, each distinct subject representing a different dimension. If so the most appropriate measure of total achievement might well be the root-mean-square mark. If two subjects are partially correlated, the correlation could be represented by the angle between the corresponding co-ordinates, and the marks would then combine vectorially. The implications of these and similar ideas have not been explored, but if they were, it is likely that a much more satisfactory approach could be made to the problem of estimating a candidate's total achievement. Certainly the present criterion, the arithmetical total of unscaled and unrelated marks, in spite of the immense prestige it has acquired, is both unsatisfactory in principle and unreliable in practice.

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[4] H. J. Taylor and Tluanga, *Grace Marks*, University of Gauhati.

If university examinations are to become a creative aid in education, it is evident that large changes will be needed. We can no longer be content with traditional procedures which are cumbrous, inefficient, and demonstrably very inaccurate. The measurement of human attainments must be recognized as a branch of applied science, in which we must be prepared to accept guidance from the specialist. In a developing country where the need for educated leadership in every field is so great, and so rapidly increasing, it is vital that we modernize our education, and especially the outmoded examination system. In the world of today, India cannot afford to select her graduates by the arbitrament of chance.

ACADEMIC FREEDOM AND INDIAN UNIVERSITIES

S. P. Aiyar

I

ACADEMIC FREEDOM is the precious life-blood of a university. Without it a university must necessarily wither, fail to fulfil its high purpose, and impoverish society. The university exists for the preservation, the spread, and the creation of knowledge and must provide for intellectual leadership in a society. Knowledge does not grow merely by a process of accumulation. Some of the old knowledge is discarded; some of it is restated and reinterpreted; some of it is a product of fresh exploration. The university is a 'community of scholars' and their true function 'is not merely to add and revise facts in relation to an accepted framework, but to be ever examining and modifying the framework itself'.[1] In performing this function of what might appropriately be called creative and constructive dissent, the scholar in the university and the faculty as a whole must be free to pursue unhindered its main functions. 'Within the confines of a university, knowledge is its own end not merely a means to an end. The essence of the institution is epitomized by the spirit of free inquiry: to follow the argument wherever it may lead; to examine, question, dispute, or rework customary ideas and beliefs. To a scholar unchallengeable dogma and hypothesis are fundamentally incompatible, and the concept of an immutable doctrine is repugnant to the very life spirit of a university.'[2]

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[1] Concurring opinion in *Sweezy* v. *New Hampshire* 354 U.S. 234, 263 (1956) cited in Arval A. Morris, 'Academic Freedom and Loyalty Oaths', *Law and Contemporary Problems*, Vol. 28, No. 3 (Summer 1963), p. 488.

Academic freedom, then, is the freedom of scholars and researchers in the university and in all institutions of higher learning and centres of research to teach and publish the results of their inquiry without interference either from the institution or from outside interests. 'Experience has proved and probably no one would now deny', said President Lowell, 'that knowledge can advance, or at least can advance most rapidly, only by means of an unfettered search for truth on the part of those who devote their lives to seeking it in their respective fields, and by complete freedom in imparting to their pupils the truth that they have found. This has become an axiom in higher education, in spite of the fact that the searcher may discover error instead of truth, and be misled, and mislead others thereby. We believe that if light enough is let in, the real relations of things will soon be seen, and that they can be seen in no other way. . . .'[3] This freedom, the university must carefully nourish till it becomes an unquestionable and unchallengeable tradition; it must fight to preserve it from every form of interference, direct or indirect, open, covert, or clandestine. It must protest itself from outside pressures from whichever quarter it might come. It must zealously safeguard its operational autonomy and provide the atmosphere for the preservation of its traditionally recognized freedom—the freedom to determine, on solely academic grounds, who would teach, what may be taught, how it shall be taught, and who may be admitted to study.

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[2] Arval A. Morris, *ibid.*, p. 488.

[3] In the *Harvard University Report* (1916-17) cited by R. K. Singh, *Our Universities and Our Vice-Chancellors* (Agra: Educational Press, 1950), p. 52.

In the advanced countries of the world, the university teacher has a socially recognized position, and by virtue of his membership in the faculty has a right to speak and merit the attention of policymakers and society at large. He is more than the average citizen in so far as he has both the leisure and the competence to speak on matters of high social import. It is the teacher's privilege to demand academic freedom not in the sense in which a citizen claims his civil liberties but as the essential condition for the role he is called upon—professionally—to play in society. This academic freedom covers not only those circumstances when he speaks on his own area of specialization but also those in which he feels it necessary to comment on any subject of public import. The physicist is entitled as much as the social scientist to speak on the social consequences of atomic energy. If the university exists as the most important institution in society to facilitate the process of orderly change, it is the function of the teacher, whatever his area of specialization, to submit the ideas of his time to careful scrutiny. The university by virtue of its being the generator of critical and rational inquiry, presents, by its very nature, a challenge to the dominating ideas or philosophy of the society in which it functions. It constantly invites a sharp reaction in the name of stability and order from the government and administration and from leaders of groups and sections in society. But 'Intellect', as Carlyle said, 'is like light; from chaos it makes a world.' Rational and scientific thinking is the indispensable condition of ordered progress in any society and it is for this reason that the safeguards of academic freedom become vitally important. The teacher must be encouraged to perform this function of the critic and live in meaningful contact with society. His social awareness must fertilize his theoretical studies (and this is more likely to be the case if he happens to be a social scientist) which in turn must facilitate the process of social transformation. Academic freedom, like all freedom, involves its own responsibilities, the violations of which present a perennial problem for university authorities. In the language of William Rainey Harper, the first President of the University of Chicago:

1. An instructor in the university has an absolute right to express his opinion. If such an instructor is on an appointment for two or three years, and if during these years he exercises this right in such a way as to do himself and to the institution serious injury, it is of course the privilege of the university to allow his appointment to lapse at the end of the term for which it was originally made.

2. If an officer on permanent appointment abuses his privilege as a professor, the university must suffer and it is proper that it should suffer. This is only the direct and inevitable consequence of the lack of foresight and wisdom involved in the original appointment. Freedom of expression must be given the members of a university faculty, even though it be abused; for, . . . the abuse of it is not so great an evil as the restriction of such liberty.

> 3. A professor is guilty of an abuse of his privilege who promulgates as truth ideas or opinions which have not been tested scientifically by his colleagues in the same department of research or investigation.
>
> 4. A professor abuses his privilege who takes advantage of a classroom exercise to propagate the partisan views of one or another of the political parties.
>
> 5. A professor abuses his privilege who in any way seeks to influence his pupils or the public by sensational methods.
>
> 6. A professor abuses his privilege of expression when . . . he undertakes to speak *authoritatively* (italics mine) on subjects which have no relationship to the department in which he was appointed to give instruction.
>
> 7. A professor abuses his privilege of freedom of expression when he fails to exercise that quality ordinarily called common sense. . . . A professor ought not to make such an exhibition of his weakness so many times that the attention of the public at large is called to the fact.[4]

The dangers of outside attack constitute only one aspect of the threat to academic freedom. More serious —because more insidious—are the dangers that lurk within the academic community itself. The faculty members could, through an all-absorbing conformism, destroy the atmosphere conducive to fruitful intellectual work. They might allow politics to dominate the university and destroy the academic element in every decision. They might water down standards in response to populist pressures or from the student body as a whole. When the university becomes a hotbed of intrigue and faction, it ceases to perform its high function in society. The standard and morals of a university *tend* to reflect the character of the society in which it exists and a corrupt society seeks to drag *the university* down to its own level. But there is nothing inevitable in this process and to break the vicious chain is the first condition of growth for an underdeveloped country. 'Universities must counteract', says President Lowell, 'rather than copy the defects of contemporary civilization.'

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[4] Floyd W. Reeves, *et al.*, *The University Faculty* [The University of Chicago Survey, Vol. III, (Chicago: The University of Chicago Press. 1933)], pp. 71-72.

Academic freedom cannot be preserved by formal arrangements, rules, and regulations alone. It is a product of slowly built-up traditions and, like democratic traditions in any society, take a long time to be formed. In the intellectual history of the West there has been a tradition of untrammelled intellectual inquiry, and even then, there have been periods when the university has been under a siege, not to mention the local forays which it has had to repel from time to time. Academic freedom is the product of a whole range of complex social and cultural factors together with institutional arrangements. It is conditioned by the attitude of the Government and bureaucracy, of the political parties and of society in general; it is affected by the state of the economy and by the economic condition of the faculty. It survives in the ideals and modes of behaviour which have over a period of time become an indispensable part of the daily life of the community of scholars who constitute the university.

II

If the task before the universities of the West has been to preserve their autonomy against outside attack, the problem in India is one of *creating* a tradition well worth fighting for—a tradition of independent and critical inquiry and removing the hindrances to effective scholarship. The tasks and functions of the university are not widely understood and appreciated by the faculty itself. The Indian university originated as an examination-conducting body rather than as a community of scholars in the pursuit of truth. And even this limited function it has performed at a low level of competence. Teachers in Indian universities have for the most part been the purveyors of factual information and have been looked upon as instructors rather than as teachers. Only in very recent years has there been an awareness of the function of the university as an instrument for social transformation. The universities grew up as agencies of the colonial bureaucracy and in their actual operation adopted the methods of work and the attitude of mind which were to be found in government departments.

Private enterprise established colleges in some parts of the country, particularly in western India. There were, besides, institutions set up by missionaries of different denominations. All these institutions were affiliated to some university or the other. They retained their administrative autonomy; the university only laid down the standards for the examination and in more recent years regulated aspects of the teacher's salary and working conditions. As a result of this somewhat diverse activity in the field of education, colleges in India today are broadly of three types: the government college, the missionary college, the private college.

Conditions of work relevant to the freedom of the teacher vary in these three types of institutions. In government colleges, the administrative hierarchy is pronounced and crushes initiative, for all promotions are strictly on the principle of seniority. Many of the teachers in these colleges have gradually over the years, ceased to live up to the ideals of scholarship which they once cherished. Government rules in these institutions have not changed over decades. A college teacher must, for instance, seek permission for what he writes and even if he wishes to speak in public he must seek prior consent. Teachers are deputed to conferences on the understanding that they will not participate in any controversial discussions. Some years ago, when the medium of instruction was being debated at the University of Bombay, teachers in government colleges were instructed not to express opinions on the question. An independent-minded teacher—if he exists at all—is quickly transferred to some other institution in some out of the way place. The atmosphere of government colleges—in so far as one gathers from the teachers themselves—is singularly inimical to a life of scholarship, particularly in the social sciences. It is perhaps no accident that the research or academic output of teachers in government colleges is distressingly low—even by Indian standards.

The missionary colleges present a different set of problems. In Jesuit institutions the distinction between those in orders, lay Catholics, and others is carefully preserved. By convention, the top administrative positions are held by the Fathers. Subjects which make room for heterodox interpretation, like philosophy or political thought, or world history are generally monopolized either by the Fathers or by lay Catholics. In one of the colleges, a teacher came into conflict with the nuns for mentioning 'population control' (not birth control) in a lecture in Indian Economics; in another, a professor of philosophy got into trouble for expressing unorthodox opinions in philosophy, and still another professor incurred the displeasure of the authorities by speaking highly of Thomas Hardy.* Conditions in missionary institutions vary a great deal and it is, of course, unfair to generalize.

The administration of private institutions again presents variations and in some of them the governing body consists of life-members. In these institutions, teachers in general feel insecure and take the line of least resistance. There is often a feeling that what is casually remarked in the teachers' common room is transmitted to the principal and there is an atmosphere of inhibition. Where the principal is himself the employee of the management, he tends to side with it and, in general, fails to take an academic view of problems. If the consideration of the management is merely one of getting a large number of students on the rolls, the principal tends to side with the students rather than with the teachers in conflict-situations, much to the detriment of discipline in the institution. An independent and academic minded principal comes sooner or later into conflict with the management. The most vicious feature of the private college is the subordination of academic interests to the commercial cupidity of the managing boards. Although the university supervises these institutions, supervision tends to be perfunctory and routine in character. Tutorials and seminars are held 'on paper', teachers are overloaded with work and given the maximum lectures and tutorials permissible under the rules; libraries are mismanaged; in general, the teachers work at a disadvantage and not seldom in an atmosphere of insecurity. Academic work is neglected and the only criteria applied for a 'good' teacher are the high percentage of passes in his subject; his ability to maintain discipline over a rowdy class of a hundred and fifty; his general 'popularity' with the students and his willingness to work on college committees connected with sports, dramatics and other extra-curricular activities. Since a large number of his students must pass, a teacher is compelled to hold additional classes and dictate notes, particularly in undergraduate classes. The serious teacher concerned with expounding his subject in the light of his own study is ignored by the students as 'useless' from the examination point of view. Nor does the management consider scholarship necessary in a college teacher. The serious teacher is thus left severely alone, with no appreciation from the management for whom one teacher is perfectly substitutable by another, often a profitable thing to do, for a new teacher can be appointed once again on the basic salary without increments. There are no formal restrictions on academic freedom in these institutions as in government colleges. But there is so little encouragement, either financial or even in terms of appreciation, and the teacher is so overworked, that he settles down to a routine and becomes at best a glorified schoolmaster.

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* But outside the limitations imposed by theological considerations, the teacher is comparatively free.

The problem of academic freedom at the university level presents other aspects and the problem varies in different parts of India. As already noted, academic freedom is a product of social, cultural, and institutional factors, and in some parts of the country the atmosphere of the university is vitiated by local politics, factions, and intrigues within the university. Few universities escape entirely the ravages of academic politics. Doubtless, a degree of politics is present in most universities of the world but in India it exists to a degree which prevents reform. Probably the greatest danger to academic freedom in India comes not from the outside—although these exist to a degree—but from within the university itself where the faculty has not grown intellectually alive to its responsibilities:

> 'Here, autonomy, the right to non-interference, has been used as a shield of the university caucus for its manipulative anti-educational activities. It has afforded a protection to the group to vitiate the university atmosphere in which alone a caucus can flourish. Technically the autonomy of the universities is preserved, but the objectives it is intended to achieve, have been completely defeated. The vast majority of the teachers have little or no voice in the determination or shaping of the educational enterprise of the university. The academic independence, the right of each teacher to contribute his best to the success of this enterprise has been denied. In this denial of academic independence lies the denial of the autonomy of a university, albeit not by the government or the community but by the university authorities themselves. The university has lost its case for autonomy against the community.'[5]

A visitor to one of the universities of India recently described to the present writer 'the pall of fear that overhung the university'. Its teachers moved and talked with caution, always afraid that their opinions would be quickly communicated to the Vice-Chancellor. Teachers could not attend seminars without the knowledge of the authorities and even of the head of the department. One of the teachers agreed to attend a seminar secretly on his way home during the vacation. This atmosphere of the concentration camp is not unknown in other universities in the country. Teachers are reluctant to criticize, academically, the views of senior teachers either in their own university or outside, through fear that the latter might be on some selection-committee at some future date and might penalize them for their impertinence. An atmosphere of sycophancy—singularly inimical to academic freedom—overhangs academic life in the country. Where seminars are conducted with financial help from some government agency like the University Grants Commission, there is a general feeling that one ought not to criticize the government. It must be added that the University Grants Commission has been open-minded and has welcomed criticism and suggestions from university teachers. What is singularly distressing is the spectacle of academic men voluntarily receding behind intellectual barbed wire, at a time when the country needs their help most. In a developing country, financial assistance to many research projects must come necessarily from the government or from one of its agencies but it has given rise to a habit of dependence on the bureaucracy. Research bodies, set up to carry out research on their own, often load their executive committees with officials with the result that the quality of research which emerges from these institutions is seriously impaired. At student functions and college associations, and even at seminars and conferences of learned bodies, it is the politician and the official who must be invited to inaugurate them. Seminars are even cancelled if a particular minister is not available to inaugurate it. A certain magnified conception of the 'Sarkar' has become part and parcel of the intellectual make-up of the academic mind in India and along with it goes, as its necessary accompaniment, the deadening conformism, which is the bane of intellectual life in this country.

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[5] R. K. Singh, *op. cit.*, p. 142.

Other inhibitory factors on academic freedom within the universities may also be touched upon. Since the universities began under State initiative, they have been run as government departments, with its pronounced emphasis on the hierarchy with the pattern of one professor for one department; its outmoded rules of audit leave little room for departmental flexibility in expenditure and the subordination of the faculty to the administrative wing of the university. The constitution of the existing universities leaves little room for departmental autonomy even in academic matters. Teachers at the postgraduate level today do not enjoy the fourfold freedoms referred to earlier. They do not determine the admission of students, their final rating and evaluation, nor even the methods of instruction. The formalities connected with syllabus change present innumerable difficulties and unconscionable delay. Nor do the departments themselves function democratically. Decisions are not syndicatively arrived at but by the head of the department in his individual capacity.

III

Academic freedom as indicated in this article is a product of social and economic conditions and the fundamental problem is one of creating in the body of teachers a spirit of dedication to the ideals of the university and an awareness of their functions in a developing Indian society. It is, firstly, a problem of morale with its implications of grades and working conditions, tenure and privileges. It is important to make the profession of teaching respectable and it cannot achieve respectability unless it is also socially recognized in material terms. It is also necessary to liberate the teachers from the fear of insecurity. Like all professions, the teachers as a body cannot hope to fight for their privileges unless they have a formal organization through which they can act. Every university in the country would do well to adopt a charter of academic liberties.

Guaranteed satisfactory working conditions, the problem is one of giving teachers a sense of involvement in decisions which affect educational problems in the country and a meaningful participation in the organization in which they function. 'To us in Britain it seems', writes Eric Ashby, 'that one other practical step which could be taken to preserve the tradition that university teachers are members of a society, not employees, is at the level of departments. In most of our universities departments have no official existence anyway: they do not appear in the charter or statutes. But they are nevertheless the loci of power. It is in the department, over departmental decisions, that the young university teacher can, if he is given the chance, play the most useful and effective part in academic government. Many heads of departments in British universities already make sure that all departmental decisions are, as it were, syndicated decisions involving the whole staff, though I have to confess that in some departments autocracy still survives; and until universities legislate for the democratic conduct of departments, the danger remains that a profession whose members used to be regarded as partners in a society will slip into the assumption that its junior members, at any rate, are employees in corporation.'[6]

This calls for administrative and educational reform of a far-reaching character. Indian colleges and universities are known to be dictatorial and authoritarian in character with a highly concentrated system of decision-making. It is hardly necessary to elaborate on the administrative maladies of educational institutions and university departments in India. If academic freedom is to be translated into organizational terms it is necessary to make the department in the university the centre for decisions in all matters connected with the academic programmes with which it is concerned. I have indicated elsewhere the possibilities of democratizing the hierarchical structure of the university department in India.[7] I may here briefly mention the possibility of breaking down the more vicious aspects of administrative hierarchy in the universities by making room for a number of professorships in the same department, making it unnecessary for the teacher either to move into another university for financial reasons alone or to dissipate his energies in other non-academic activities within the university. Important decisions relating to the admission of students, to rating and evaluation and other matters must be collectively decided within the departments. It is necessary, as a consequence of this, to internalize the examination system making the teachers of the department solely responsible.[8]

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[6] Eric Ashby, *Universities Under Siege* (Johannesburg: University of Witwatersrand, 1962), p. 16.

[7] 'Tradition, Modernity and Change' in *The Radical Humanist*, November 1, 1964.

It might be argued that the baffling complexities and variations of conditions within the country—and within the same university—make any reform of a meaningful character difficult. The universities as they now exist are hardly capable of improving on their own and creating the conditions favourable for the growth of a healthy intellectual life. The cliques and the factions within the university will successfully sabotage any scheme of radical change which affects their own self-interests. Sir William Hamilton's remarks on the condition of British universities in 1834 has relevance to the educational maladies of present day India: 'The History of Universities—in truth, of all human institutions, lay or clerical, proves, by a melancholy experience that seminaries founded for the common weal, in the furtherance of sound knowledge, are, if left to themselves, if left without an external and vigilant, an intelligent and disinterested supervision, regularly deflected from the great end for which they were created, and perverted to the private advantages of those through whom that end, it was confidently hoped, would be best accomplished.'[9]

Education in India being a State subject under the Constitution and the universities being autonomous, there is bound to be opposition to government-originated reform. But the Ministry of Education and the University Grants Commission can exert pressures indirectly and threaten to withhold grants if reforms are not brought about within the university.*

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[8] See my article on 'Need for Change in Examination System', *Indian Express*, October 13, 1964.

[9] Cited in R. K. Singh, *op. cit.*, pp. 10-11.

If radical changes in the pattern of higher education and in the administrative structure of the universities are impossible, the only alternative for the Ministry of Education would seem to lie in the policy of setting up model colleges and universities in every State of the Indian Union which, in a decade, will present a glaring contrast to the older universities and compel them to set their own institutions in order. Meanwhile, the Government of India must reverse its policies of dissipating its meagre resources on universities and institutions of unquestionably low standards. If the new universities and colleges are worked on sound educational principles from the start—with the help of sound educationists from some of the world's leading universities, if necessary—it may be possible to work them in response to the changing needs of Indian society and build within them the conditions of freedom essential for a democratic society.

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* I have drawn attention to the implications of constitutional amendment with a view to making Education a concurrent item in 'Education as a Concurrent Power', *Opinion,* Vol. VI, No. 8, dated June 29, 1965.

SOCIETY AND THE UNIVERSITY TEACHER

Devdatta Dabholkar

IN THE treatment of this theme I will touch briefly upon themes which are being taken up separately in this symposium. These themes include: (*i*) the role of education in a developing society, (*ii*) the university and the rural community, (*iii*) academic freedom in the universities, and (*iv*) the role of government in higher education.

I will start with a few propositions.

1. The Society and the University teacher in India have yet to develop a meaningful relationship.
2. This relationship when adequately and fruitfully developed will necessarily have some of the aspects of the relationship obtaining in advanced democratic Western countries.
3. It may have to go in certain respects beyond what the Western countries have achieved. It will be required to have a more living contact with the masses. The Indian university teacher may not well be able to afford the luxury of the Ivory Tower.

We can here turn our searchlight on for the 'Society' and 'the University Teacher'. Society in our country has been formed out of hundreds of castes and sub-castes, groups and sub-groups. It is straining internally at a number of points with religious, linguistic, and other tensions. The struggle for national freedom gave this mass a semblance of unity and cohesion. But even while we attained our independence, the searing shock of a division of the country had to be accepted as its price. The Siamese twins were separated but their entrails still remain very much involved. Both India and Pakistan have not yet been able to gain respite from the consequent restlessness. The linguistic tensions, though at the margin, are very acute. Problems like the food crisis, administrative corruption and incompetence, and the existence of subversive groups and their activities keep the society on edge all the while. A society which is not at peace with itself cannot be expected to provide a congenial climate for the free development of thought and culture. When these difficulties are superimposed on a society, traditional and inert for centuries, the difficulties of the situation become well-nigh insuperable.

And where is our elite within such a society? Where is our university teacher? Our elite, if we include all the intellectual professions such as lawyers, doctors, engineers, is very much absorbed at present in taking a short-term view of the whole thing and in making the best of the situation. Neither is there any hope from other groups. The politician-elite are politicians, first and last. Journalists do not differ much in character. The mantle of intellectual leadership in such a situation would, therefore, naturally fall on the universities and the university teacher. But is there a Laski or a Russell in Indian universities: men who have a vision of the shape of things to come and those who are trying to enunciate the content of a new pattern? This is not just a lack of intellectual ability; it is a deficiency in aspiration and orientation. If the university teacher had been passionately committed to a situation like the one in India at present, idealism or far-sighted vision might have emerged. But our university teacher is delightfully ignorant, sweetly innocent and completely uncommitted. He is not committed to democracy, nor to equality, nor to economic development. Most of them have forgotten, if they ever knew it, what it is to thrill with a new idea; some, who are more alive, are pale reflections of their foreign counterparts; and a few, vibrant with their own energy, think (as a shrewd foreign observer remarked) that smartness and cynicism are substitutes for painstaking scholarship.

At present, the society in general is indifferent to the existence of the university teacher. This is easily observed if one sees the newspapers of a city like Poona, which now and again, claims to be the cultural capital at least of the State of Maharashtra. Columns would be devoted to the third-rate speeches of second-rate politicians but academicians of international repute would hardly receive a notice. The State, also, when it suits its convenience, uses the university teacher as the echoing board of its ideas without at any time trying him as the sounding board. It is depressing to enumerate the occasions when the state changed its policies and the University teacher, who never cared earlier to strike a dissenting note, switched over to the new tune. A whole range of political and economic policies can serve as an illustration for this. All this must change if we are to weave the relationship between society and the university teacher into a more meaningful pattern.

Stephen Spender said a few years ago that Asia is passing through a revolution without a transformation. What is true of Asia is true of India. The only difference is that the course of history has given us a chance which it has denied to almost every other nation in Asia. Perhaps it is not even yet too late, but for aught we know a revolution in its worst form might be lurking just round the corner. In case this happens all the fine points of discussion in the relationship between the society and the teacher will become metaphysical abstractions which have no relation to reality. It is of the utmost importance, therefore, in the present Indian context to concentrate our attention on a few major, practical issues.

Society cannot be changed *en masse* overnight. Neither precepts nor pressures can do it. But while society continues to remain organized, howsoever feeble the organization may be, there remains in existence a lever which one can hopefully operate. We have grounds for hope while a constitutional democratic government continues to rule over the country. But its existence today is not a guarantee of its continuance tomorrow. It is important that all of us realize this but it is very much more important that those who are now running the government should realize this and act up to that realization. The present government is mostly 'a lack of an alternative' government. People vote for it because they do not know for whom else they should vote. Such a government may not be displaced from the seat of power through the ballot-box but if it therefore feels secure, God alone can save the government and the country. Only utterly selfish people whose life centres on the philosophy of 'after me the deluge' can be complacent in a situation like this. We can only hope that some better philosophy is animating the powers that be.

In any context other than *après moi le déluge* certain common conclusions follow. We have to bring about a real renaissance in India as early as possible. This renaissance will not be limited only to the intellectuals (who consequently get isolated from the masses) but will reach deeper down to the lowest strata of society. We have to foster the proper social climate for economic transformation and also for getting our democracy more firmly based. In all this the university teachers have a positive and important role to play. It will be the duty of the State to enable and encourage the university elite to play this role. This will, of course, have reference to a large number of issues which are discussed as relevant in this context such as salary scales, conditions of service, social status, scope for research and original work, academic freedom, and other similar things. On each of these it is possible to make a number of detailed suggestions. State action or acceptance of ideas by society in these respects, however, has not lagged behind for want of proper formulation of these issues. The whole approach is vitiated by a distrust of the university teacher or, at least, by an indifference to his existence. In a country like India where the university teacher was mainly recruited from castes which are now on the defensive, this attitude has social undercurrents. This attitude needs re-examination. In the first instance, with the expansion of university education the recruitment of university teachers is now from a much wider coverage. Any conscious or unconscious prejudices must therefore be rooted out now. On the other hand, university teachers must also realize that just being a teacher in a college class-room does not make one a member of the intellectual elite. The term demands a much more positive content. Recognition of this position by the state and also by the university teacher will help establish a line of communication if not communion between the two.

There is a further point to this. Though the state governments are having various programmes of education, no one in the government or Congress party circles seems really concerned over the lack of the climate for competent intellectual discussion, so essential for a throbbing democracy. This can, of course, be done through independent study circles. (It is not being attempted even there on any worthwhile scale.) But any state which believes in democracy as its first article of faith must see that this atmosphere pervades the universities in the country. This would imply a scrupulous regard for the autonomy of the university and a genuine respect for the social status of the university teacher. In their turn, the universities should become a real meeting-place for minds where the people will feel themselves free to follow 'wherever the argument leads them'. The teachers as well as the students may come to develop their individual 'commitments'. This is not in itself undesirable if no one is trying to preach a fanatic dogma. Within the university walls the basic commitment is to open discussion, to democracy, and to truth (not 'The Truth'). In a university which is vibrant with this strength perhaps a few preachers of a fanatic dogma may not be able to do any harm. They may even help give a keen edge to the sharpening of wits.

In such a set-up the university teacher will have to react with a positive response. It is no use trying to tackle persons who enter the teaching-line unwillingly and as the last resort. It is quite possible that a few of them may eventually develop real enthusiasm but such cases are rare. The main remedy for this would be to improve the monetary and other attractions of this profession so that the right type of people are recruited. Even in such a group, however, we may be able to distinguish between the genuine research workers whose main interest is in expanding the frontiers of knowledge. All honour to them. They are the salt of the earth. Woe to the university which after being lucky enough to attract such souls hampers them in their work by other loads. But even in the best of universities the number of such workers is very limited. A common university teacher is a competent student and teacher of his subject. He has done some research but that is not his main interest. He is not straining to break through the frontiers but is all the while very near to the frontiers as they are being expanded. He leads his students to these outposts and encourages those who have the talents to join the front ranks of the struggle.

This teacher is more in contact with the young generation and can inspire and guide the students by his precept but even more by his example. He alone leaves the most lasting impressions on the minds of youth in its most impressionable stage. It is very essential, therefore, that these teachers should be properly orientated and that they should be conscious of their power and the responsibility. Students do not generally fail to respond to a competent teacher who is also genuinely concerned about their well-being. Very careful attention has to be paid to the recruitment of such teachers and to providing them all the necessary facilities for fruitful contact with the students. The whole run of extra-curricular and other youth activities can be reorganized in the light of this.

Such a teacher should neither shut himself in his Ivory

Tower nor confine himself only to the university campus. He must reach the masses through sympathy, understanding, and active participation in their endeavours. In a country like ours this is a special responsibility of the university teacher. This will also prevent the formation of a caste of new Brahmans. Caste references are very rarely made in polite conversations, but it is surprising to find how the secondary and primary school teachers (let alone the masses) resent the superior attitude of the university teachers. We need not feel a guilt-complex for an attitude which permeates the whole social hierarchy. But if society is to become an integrated whole, these barriers must be broken down sooner or later and it is all for the best if those at the top and also the most enlightened make a beginning themselves. This change in attitude will then easily flow downwards. If a university teacher mixes without any feeling of patronage with the illiterate villagers the intermediate ranks will have to revise their attitude. This mingling, when it ultimately finds its natural, normal, unforced level, will be to the common benefit of all. As the university elite gets recruited increasingly from among the rural classes it should be possible to achieve this all the more easily. But it is necessary to guard against two dangers. One is that this group may forget its roots and lose all contact with the masses. At the other extreme it may remain too much rooted and consequently 'rustic'. If this group strikes a balance in these respects it can be one of the most important instruments of renaissance.

Above all, the university teacher influences society through the students whom he graduates into action as citizens of a free and egalitarian society. Among all the forms of power, the power of youth is the highest. It can be highly constructive or explosive. In the modern world its explosive character is more in evidence. In India for nearly twenty years after the 1942 movement the student force was dormant. As recent developments indicate, this force is again getting galvanized into action. When students get restive action becomes necessary on two fronts. The national leaders must analyse the social situation and try to find out the causes which are exasperating society and the student world. Student disturbances are not seldom a reflection of some basic social disorder, and unless the basic causes are tackled it is useless, or even dangerous, to try pressures or palliatives. But a mere improvement or change in the social situation will not provide a complete remedy. The universities and the colleges must not only impose discipline but teach the students real self-discipline; for that is the only discipline that can work in all situations. It is a sorry sight today to see society, state, universities, teachers, and guardians stand by and watch helplessly as the younger generation is spending time, energy, and money in aimless drifting or mischievous pursuits. No one thinks this desirable and I would scarcely believe that even the students desire this. A grand alliance of society and university teachers is essential to save the situation and guarantee us our future.

SCIENCE AND HUMANITIES

Daya Krishna

SCIENCE AND HUMANITIES belong, so to say, to the opposite poles of knowledge. The former, specially the natural sciences, try to understand what is essentially not a human creation. The latter, on the other hand, are directly concerned with what is intrinsically and inalienably created by man. The creations with which they are concerned are, unlike such things as nylon or orlon which man has created, essentially symbolic in character. They refer to meanings and values and it is these that one seeks to understand through them. Even History, which ostensibly seems concerned with 'scientific' accuracy and objectivity in its subject-matter, is basically a record of man's activity, the significance or meaning of which we wish to discern.

Man's quest for meaning and value, as evidenced in his symbolic creations, is, then, the core of the study of the Humanities in any culture or civilization. And it is these values and meanings which, in the deepest sense, give a distinguishable individuality to any culture or civilization. It is, thus, in the study of Humanities alone that a culture achieves self-identity at a self-conscious level. This is one reason why it is only in the study of their arts, literature, and history that a people achieve intensive self-awareness of themselves. And, equally, it is only through these that we become aware of the 'otherness' of the other people.

Science, in contrast to this, is something universal. One does not go to the knowledge of the rocks or the earth or the stars or even of matter in general to find the *specific* uniqueness or identity of a *particular* culture. The *seeking* for knowledge and the place assigned to that seeking in the spectrum of values held dear by a people are certainly important for the characterization of their culture. Equally, it matters a lot as to what is really held to be 'knowledge' in a particular culture. But both of these are different things from mere knowledge of factual matters and sheer skill in the doing of things which, while immensely important for survival in the warring encounter of civilizations, are hardly relevant in the self-conscious identity of these cultures themselves.

The crucial problem of underdeveloped countries in the field of education may be said to derive from this deep dichotomy within the heart of education itself. On the one hand, there is the need for self-identity, without which there seems little point in calling oneself 'oneself', that is, distinct from others. On the other hand, the very need for survival, both internal and external, makes it imperative that scientific knowledge and the technical skills associated with it be acquired in the shortest possible time.

The self-identity, it should be remembered, is not an abstract, static identity. It is not the holding on to what has been achieved once and for all, or the perpetual repetition thereof by each succeeding generation in time. This, fundamentally, is the mistake of the revivalist or even the traditionalist who clutches on to the past as if that alone would give him his definition or identity. The person who does that in actual life, that is, the one who gets stuck in some period of his past life consciously or unconsciously, is a neurotic who helplessly and miserably fails to respond relevantly to the challenges of the present in his life. A nation may likewise get stuck in its past and respond neurotically to the challenges of the historic present in its life.

Memory is the root of the self-identity of an individual, and it is even so with societies and cultures. But memory in order to be creatively alive has to function as a *base* for the living in the present and the building of the future. It permeates awareness which is oriented to the present and the future and is always relevantly selective to meet the challenges that are present in the situation. The awareness of the present and the subtler sensitivity to the incipient future define, thus, the context in which a living memory functions in a growing, creative society or individual. And it is this task of making the memory alive once more in the life of our culture and society, that I see as the essential function of the teaching of Humanities in India today.

This awareness of the past, however, has to be an interactive awareness. In other words, it has to be brought to bear on the living issues of the present and made to solve the issues that are clamouring for solution. It is only when it has to face the challenge of pragmatic effectiveness that it can really modify itself in a creative manner. This is equally true in another direction. The interaction that is demanded is not merely the one with the practical challenges of the living present, but also that with the different and alternative ways of theoretically conceptualizing and understanding the same or similar phenomena. The traditional enterprise of intellectual comprehension has to meet both the theoretic and the practical challenges of the contemporary present. The traditional comprehension, however, need not be viewed merely as something in the dock which has to prove its *bona fides* at the bar of the present, specially when the challenge is conceived at the theoretic level alone. It can be the challenger as well as the challenged, the judge as well as the judged—not on grounds of authority, past or present, but on grounds of adequacy, correctness, and comprehensiveness which alone are the criteria for judging anything in the intellectual field.

However, whether it be in the role of the challenger or the challenged, the intellectual tradition must permeate the theoretic awareness before it may perform either of the functions in any meaningful sense of the term. Today, it is just this which is conspicuous by its absence in the intellectual climate of this country. The Modern Indian University, instead of being the active meeting-point of the challenge, in effect alienates the student from his Tradition and makes him think and feel and behave as if there has been no significant thinking on any subject during the whole millenia of India's intellectual past. It seems to be a tacit presupposition of all teaching in an Indian university that, as far as intellectual matters are concerned, we have to start with a clean slate in this country.

The disastrous consequences of such a fantastic presupposition are writ large over the minds of the intelligentsia in this country. They are blissfully unaware of the intellectual tradition of their own land and, thus, cannot creatively interact with it, even if they wanted to do so. A strange but revealing sign of such a situation is the curious fact that this whole tradition has become segregated into the Sanskrit departments of the universities where one teaches not merely language and literature, but almost everything written in the language itself. It is as if the departments of English were to teach Philosophy, Political Science, Sociology, Economics, and Religion also. It may sound strange, but this is actually what happens in the Sanskrit departments of most Indian Universities today. Further, if we reflect that the only competence which most of these people possess is a knowledge of the language and not of the subject-matter taught, the situation would seem even more fantastic. It is not as if the person who was teaching political science or philosophy was himself interested in these fields and actively pursuing knowledge therein. Rather, the situation in most cases is just the opposite. He is teaching because he knows Sanskrit and there is a text in that language on the subject which is to be taught to the students in the course. If, on the other hand, one asks 'why is it in the course?', the only answer one ultimately gets is that otherwise, it would not be taught or studied or known anywhere else.

The situation of the Sanskrit departments in our universities should, I suggest, be an object of greater reflection, specially in the context of the question I am discussing in this paper. They are, presumably, the repositories and carriers of the intellectual tradition I am talking about. Yet, they smell of something dead, something antiquated, something nobody wants or cares to want. Segregated, living in an academic apartheid world of their own, feeling inferior to the rest of the intellectual community, visited by none, dusty and dingy, closed to the intellectual winds of the day, they fester, breeding desolation and despair that cuts off both their culture and themselves from the vital roots without which nothing can flourish and grow.

The idea of Sanskrit Universities is even worse. Instead of curing the disease, it only perpetuates it further. It is the absolutization of the policy of segregation and apartheid in the academic world. Schools of oriental studies are all right in the West, for there they are studies of something that is dead and past for them. We also may study Greece or China or Egypt or even the West in that manner. But we do not want our own past to be dead to us and so we cannot make of it a mummy in a museum and study it in that manner. The example of Greek and Latin studies in the West of today would be irrelevant in this connection as the Western intellectual tradition has never lost the continuity with its own past as ours has done.

Thus it seems obvious to me that the establishment of Sanskrit Universities, or the proliferation of Institutes of Indological studies, or the greater availability of generous grants to the Sanskrit departments of the already existing universities would not help us in the matter. What is needed is something in a different direction rather than doing something more in a direction that has already proved a failure and a blind alley.

The different direction that I envisage for a fruitful and creative interaction between Tradition and Modernity in the intellectual field is the following:

1. The abolition of the segregation of the whole of India's intellectual tradition in the Sanskrit Departments of the universities and their *dispersal* into the departments proper where those subjects are *specifically*

taught. Whether it be Indian Philosophy or Aesthetics or reflection on society or polity or economy, these should be taught in the departments where they, in their modern versions, are usually taught.

2. The Indian intellectual tradition in these subjects should be taught by a person who has specific knowledge of the subject and also knows Sanskrit very well. This is an obvious requirement. Yet, in most cases where the Indian intellectual tradition in the subject is even taught in the department, it is done so by a person who has hardly any knowledge of Sanskrit at all. Thus, we have the peculiar situation of persons in the Sanskrit departments having knowledge of Sanskrit, but with little interest or knowledge of the subject they teach, and persons in the other departments who have an interest in and knowledge of the subject they teach, but who possess no knowledge of the language in which the intellectual tradition of the country is written and preserved.

3. The Sanskrit departments should be reorganized with a change in focus on (*i*) language-teaching, (*ii*) translation, and (*iii*) research. The emphasis in language-teaching should be primarily on the facility in *reading* the language and not in the writing or the speaking of it. For this, we need a *graded* series of bilingual texts which may aid this process considerably. Equally, the students should be encouraged to offer translation of a work as a part-fulfilment of their M.A. degree. It may be a useful idea in this connection to offer 50 per cent marks for this purpose. The translation of more difficult works should be the task of the teachers and special encouragement may be given by granting two or three increments to the person who

has done so. Also, the university may undertake the responsibility for the publication of these translations, provided a committee of expert or experts pronounces them to have attained a minimum standard. Even the danger of duplication of translations in different universities should not deter us from embarking on this scheme. Different translations of the same work would only add to a clearer picture of it. In any case, the danger of too much duplication can be avoided by circulating the list of works on which the Sanskrit department of a university is actually engaged.

All this, obviously, is only the providing of a framework that may facilitate the creative interaction between Tradition and Modernity in the intellectual domain within this country. In this connection, it may be as well to guard ourselves against possible misunderstanding at the very outset. First, it should be clear that I am not arguing that the intellectual tradition of India's past is necessarily truer or more correct or more adequate than the contemporary western tradition in the same field. *What we are asking for is not a Revival of the past, but rather an Awareness of the Past,* which is a very different thing indeed.

Second, what I am asking for is not merely an awareness of the past, but a differentiated awareness of that Past which itself is primarily *intellectual* in character. In other words, it is the *differentiated intellectual* tradition in each *separate* field of human *knowledge* that we want the student in an Indian University to become aware of.

Third, this awareness is not to be a merely *historical* awareness, segregated into a self-sufficient circle of its own. Rather, it should interact with the phenomena in these fields, on the one hand, and also with the contemporary knowledge concerning them, on the other. It is only when such an interaction is achieved that the hoary tradition of India's intellectual past may be expected to become alive once again and contribute to a healthy and organic growth of academic life in this country.

Fourth, it should be clear that I am not arguing for the *equal* relevance of the past tradition to all the fields of contemporary knowledge. A clear difference, in this context, may be seen between the natural sciences on the one hand and the social sciences and the humanities, on the other. Among the latter, the past tradition is always relevant in a manner it could never possibly be in the case of those studies that belong to the natural sciences. This derives, in a sense, from their concern with those aspects of the human reality which are almost of a perennial nature.

* * *

The differentiated awareness of the diverse intellectual tradition in each specific field of study is, certainly, a necessary condition for that creative contact with the past without which little organic growth in the intellectual life of this country seems possible. But it should be equally clear that it is not a sufficient condition. For the real break-through to be achieved, the awareness has to be combined with an attitude which in its intrinsic essentials may be called 'scientific', though it is hardly fostered by the teaching of science in this country.

Scientific education, in a real sense, seems no different from any other education in this country. It does not foster a different attitude towards knowledge than the one usually inculcated through the teaching of the

Social Sciences or the Humanities. In fact, one of the most interesting questions to be investigated is the failure of Indian students to do even reasonably creative academic work after returning from abroad where they did give ample evidence of possessing the talent to do so. The situation, in this respect, is no different between those who go in for the natural sciences and those who go in for the social sciences or the humanities. In fact just as there seems little difference between the students who study the sciences or the Humanities in this country, so also there seems hardly any difference in this respect among those who return from abroad. It seems that the basic attitudes fostered by education in an Indian university are hardly changed by study abroad.

The reason for this is that 'science', ultimately, is not the information about certain facts or the learning of certain techniques or even the asking of certain questions. Rather, it is a whole attitude towards knowledge and knowing which is fundamentally different from the traditional one. It is basically a problem-solving attitude that tries to see knowledge in the perspective of its uses for actual or possible human purposes. The function of knowledge is its *relevant use* in the solution of a theoretical or practical problem and the only criterion of one's really acquiring knowledge is the capacity to *use* it in such a manner.

Unless, therefore, the scientific attitude permeates the teaching of every subject, the awareness of the whole intellectual heritage, even if achieved, would only be sterile in character. It is only when the awareness of tradition is fused with the ferment of the real scientific attitude that genuine native creativity in the intellectual field may be expected to emerge. Otherwise, we will merely be the epigoni of the epigoni and our universities, the alienating centres *par excellence*, purveying something *ersatz*, something adulterated, something which has no roots either here or there.

GENERAL SCIENCE FOR ALL

Duncan Fraser

> 'The scientist does not study nature because it is useful; he studies it because he delights in it because it is beautiful.'
>
> —Henri Poincare

In this scientific age one is always reminded of sensational achievements in transport, radio, chemical industries, atomic energy, and so many popular references to science would seem to suggest that these technological achievements constitute science. Science is not limited to technology and any view that science is technology is too limited. The great achievements of the present century are, as it were, the shadow of science, but not the substance. Doctors and engineers may be excellent technologists in so far as they are experts with the tools of their trade, but they may not necessarily be scientists. At the present day there is, and probably has to be, more specialization, but many of the great scientists were not specialists, and had wide interests and activities in many fields of natural phenomena to which they applied the scientific critical thought. One has only to consider Sir Isaac Newton or Sir Christopher Wren, the architect, who was a physiologist of no mean repute and Professor of Astronomy at Oxford.

It would appear, therefore, that if we wish to teach Science we shall have to aim at something far beyond the mere application of science. We shall have to seek out the spirit infused into science by men with a passion for truth which enables us to reason. In the words of Dr D. W. Hill: 'Science is more than technology and is greater than the sciences. It is a system of thought, a philosophy and a guide to maturity. It is a living thing of joy and beauty intimately interwoven with the affairs of life and yet distinct from them. It is a medium of expression in which the imagination has full play. In short, the method of science has revealed for the first time not only the beauties and harmonies of the universe but also the ingenuity of man which can build such a superstructure as the natural sciences on the foundations of observable facts.'

In the teaching of science, therefore, we should be, at the outset, absolutely clear as to our aims. Should we wish to produce competent hacks well-versed in the three R's to meet the demands of commerce and industry, then by all means let us do so and devise our teaching to that end. If, on the other hand, we wish to produce scientists, then our approach must be modified considerably, if not radically changed. For the scientist the course is clear. The young mind requires more direction than stimulation. It is inquisitive, wishing to explore the unknown, and even from the very early stages it wishes to find out the nature of things and the causes of phenomena observed daily. Our children must be mature citizens thinking and ever patiently seeking. We must, therefore, aim at producing not technical experts only, but mature men and women. Professor Bernal summarizes the aim of science teaching thus: 'The chief aim for the use of science in education is that it teaches a child something about the actual universe in which he is living in making him acquainted with the results of scientific discovery, and at the same time teaches him how to think logically and inductively by studying scientific method.' He indicates that some success is being achieved in the first of these aims, but practically none at all in the second.

If success is to be achieved in either of the directions mentioned by Bernal much will depend on the method of teaching and on the content of the course. Regarding teachers, those who have appreciated the methods of science and are ready to pass them on are likely to meet with considerable success, provided that they are enthusiastic about teaching, inspired by the subject and can avoid the imparting of dreary facts, figures, and unassimilable details. Sometimes, this is not possible, as will be indicated later. The teacher's methods will depend on many factors, as, for example, the intelligence of the pupils and the resources available. But, in general, the chief handicap in the teaching of science is not because of the unavailability of teachers, but because of the content of the course. It is extremely easy to frame a science course such as will pretend to impart to the pupils a conglomeration of scientific facts, but to prepare a good well-balanced course is one of the most difficult tasks and where we are not yet convinced that we have been successful. There are at least certain mistakes which have been made and which should be avoided at all costs. The value of information tends to be grossly exaggerated. There is far too much stress on knowledge of facts and too little on the ability to apply them. There is always the danger of specializing at too early an age with the result that the information imparted is only of value if the subject is carried further. The tragedy is that for the majority, the technologists included, the subject is not carried further and the student is so thoroughly sickened that he does not have the desire to pursue the matter any further.

The general aim should be to arouse interest in science and its applications in everyday life and to this end knowledge should not be confined to any one field of science. The specialist's need should always be borne in mind, but this is not an urgent problem as the general tendency is to consider that all are specialists.

It is now generally considered that at least up to the conclusion of the Secondary School stage there should be absolutely no specialization, and in certain situations this position should be maintained for at least one year after the completion of the Secondary School Certificate. In the introduction of a General Science course there are, naturally, many difficulties to be overcome. For example, there is the time factor. With the limited time given to the teaching of the sciences, it is frequently argued that any course to be completed within the allotted time would be so superficial that it is not worth teaching. Here a more generous allocation of the available time to the teaching of science is desirable if not essential. Again, regarding the content of the course, it may sometimes so happen that the knowledge to be imparted is too difficult for the majority of boys and girls. Naturally, we should wish to introduce certain outstanding modern discoveries, but when we come to do so we are faced with the necessity of building up quite a considerable background knowledge which may be for some entirely beyond their grasp. This is particularly so in classes which are not homogeneous with regard not only to general intelligence, but also to general outlook and experience. In an industrial area, for example, the chances are that many may be familiar with the various industries of their environment and with the technology developed in such centres. In a purely agricultural area, on the other hand, the outlook and experience may be entirely different. Consequently, the course in any particular area may be conditioned by that particular environment with the result that in some cases the type of science taught is limited because of its usefulness. Most courses of General Science are based on the three main sciences: Physics, Chemistry, and Biology, but although these may be considered as the main source, no satisfactory course can be considered complete if it does not include other sciences such as Geology and Astronomy. If we examine these sciences we observe that no one is distinct from the other, but one interpenetrates the other so that it is absolutely impossible to deal with them as watertight compartments of knowledge. In fact, one might even suggest that the term 'General' should be omitted altogether. In the teaching of General Science the question arises as to whether we should concentrate on the scientific method and history of science and ignore, largely, the teaching of facts. As to this question we must admit that there are certain facts that must be imparted if the subject is to be appreciated fully. A life of Rutherford, for example, would lose much of its thrill if certain rudiments were to be omitted. But, where facts are to be imparted they should have as close a connection as possible with everyday life, and should be connected with some major problem and not merely isolated pieces of information. Take, for example, atomic fusion or fission, which should appear at some stage in the course for a modern schoolboy or schoolgirl; this can only be intelligible if certain basic facts are first imparted, but any enthusiastic schoolboy with his profound interest in such a subject would have no difficulty in appreciating the fact that there is a relationship between mass and energy. Similarly, in Chemistry, how much more thrilling the subject would become, if at quite an early stage the pupil is introduced to the elements of atomic structure. One would not wish to introduce Wave Mechanics, for example, but could enable the pupil to have a sufficiently accurate picture of the structure of the atom to help him to follow more intelligently many of the chemical reactions with which he is at present spoon-fed. Much will depend not only on what the boy should know, but also on what the boy wants to know. Professor Bernal in 'The Social Functions of Science' says: 'Now physics and chemistry as required for university entrance or school certificate has been worked into one of the most repulsive routines imaginable. A vicious circle has been established between the schools and the universities by which neither can alter the curriculum because of the objections of the other.' Referring to the concentrated efforts made by science masters to make the curriculum attractive, he goes on to say: 'For every boy that it attracts there must be two or three that it puts off science for ever.' Regarding the lack of co-ordination between the school and the university, one is in full agreement, but it is surely an exaggeration to suggest that the attractive curricula being devised nowadays have disastrous results to the extent suggested. There may be the occasional genius in the class who feels that progress should be more rapid, but there is no reason why any such person should feel that he must proceed at the same pace as his classmates.

On the contrary, the very content of the General Science is, or should be, such that the pupil is inspired to seek wider horizons, and frustration need not arise. Professor Hogben in *Science for the Citizen* takes a somewhat similar line, and would seem to require factual information quite beyond the capacity of the average person.

There have been many attempts to devise courses for General Science. The 1961 Policy Statement of the Association for Science Education states: 'The effect of science on human life and thought have become so great, and are potentially so much greater, that those who have no understanding of them, and of the science which has produced them, cannot be considered properly educated or truly cultured and therefore are unable to participate fully in the life of their time.'

It makes three recommendations with reference to Grammar Schools:

> *First*, that all pupils should follow a balanced course of science subjects up to the end of the fifth-form year. This course should include Biology, Chemistry, and Physics with some Astronomy and Geology, if possible.
>
> *Second*, that science should be studied by *all* pupils in the sixth* form. We have in mind a broad course designed to enable pupils to attain greater scientific literacy, not the specialist courses leading to 'A' level examinations.
>
> *Third*, that subject specialization should be retained in the sixth form, but with much-needed reappraisal of syllabus-content and of teaching aims and methods.

The course in General Science up to the end of the fifth-form year has much to commend it and is the result of many years' experience and planning in the U.K. It is the result of the confirmed belief of most educationists that science must play a prominent role, if not the dominant role, in all systems of primary and secondary education. The extent to which this general realization is put into effect depends largely on one's ability to overcome certain sentiments and preconceived ideas. As one examines the courses followed in different countries, one is conscious of this general trend of having General Science as a subject which could meet the requirements of an adequate science course without undue specialization. It must be appreciated, of course, that the General Science curriculum will differ in certain details from

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* Almost equivalent to Intermediate Science of Indian Universities.

The stated aims are:

In Maharashtra, or at least in most parts of the State, one detects the general effort to produce a course embodying the general principles aimed at scientific training, the sustaining of interest and having as its content much that is related to everyday life.

The stated aims are:

1. To make the children take a keen interest in the process of living.
2. To make them appreciate the process of living as something common to human beings, lower animals, and plants.
3. To make them feel that the process of living is facilitated by physical contact with our environment through our senses.
4. To study how man has, by scientific invention, increased the effectiveness of the vital activities in his own life.

5. To inculcate in the children the habit of observing things around them.

These aims are good, and the actual content of the syllabus reveals considerable appreciation of what a General Science course should be. Perhaps it would be well if we could have a few more modern topics and more of the historical approach to the subject where such is feasible.

But, whether such a course will succeed or fail depends very largely on the teacher. The actual provision for practical work is almost negligible, and it is here that the danger lies. There is so much here that could give rise to general thrill and wonder. For much of the course the class-room is, or should be, the open air, fields, and gardens. No flower drawn by the finest artist can ever cause the wonder and excitement of the natural product. For Astronomy, the skies constitute a very rich field, and although much is not available by day, a great deal can be assigned for study at night out of school hours. There is absolutely no excuse for the argument that apparatus is not available. Any teacher with the minimum of initiative can devise simple apparatus for many common experiments in Physics, for example, from materials commonly available at next to nothing. Such experiments in science are the subject of an excellent publication by UNESCO entitled: *Science Experiments with Simple Equipment*. The experiments in this book are in no sense crude, but precisely of the type that will demonstrate more effectively than much of the 'polished' product, which many schools cannot afford. Moreover, many of the experiments in this book can be performed by the child in his own home.

In American schools the emphasis on practical work is very extensive. In fact, one feels that the whole science course is centred round the practical course, and much of the unessential factual information is discarded. In one such course carried out successfully, the student is not even introduced to the textbook until he has had several days in the laboratory. He realizes that Chemistry, for example, is an experimental science, and one notable feature is that in a heterogeneous class the brighter student is able to go ahead of the others. Although such an approach may be more suited to the higher age groups, it nevertheless indicates the inherent value of such a procedure.

Generally, at whatever stage the school ends and the University begins, there tends to be a bifurcation of Science and Arts. Prior to 1937, Bombay University, conscious of the need for a course in science for all, had Physics for all First Year Students. Like so many University courses, this course involved a great deal of specialization even though the intention might have been otherwise. But, instead of a drastic revision of the science course for First Year students it was decided to introduce bifurcation. This in itself was a retrograde step, but the repercussions were even more serious. The First Year Science student was then required to study Physics, Chemistry, and Biology. One would not object to the inclusion of these three sciences provided that something had been done towards drafting a course in General Science along the lines suggested earlier instead of specialization at a stage where the students are not prepared for it. If we consider the First Year Science course in Chemistry, for example, we can see nowhere any evidence of 'travail of soul' in producing something for the age group involved. On the contrary, what seems to have been done is that the former Inter Science course has been somewhat amplified, and certain topics extracted from it to form the basis of a First Year course. A few topics are of interest, but much is a complete conglomeration of factual information where little can be done to inculcate a scientific attitude. It is very doubtful whether students can emerge from such a labyrinth still able to think logically and inductively. Memory work is at a premium and with the spectre of the University examinations on which so much depends it is virtually impossible to do what one would wish to do. Surely, this is a stage at which students could be introduced to certain underlying principles such as atomic structure and the theory of valency. With some elementary knowledge of such topics, much of the burden is removed; reason rather than memory is what ultimately counts. The various laws of proportion, while quite interesting as historical observations, may well be left at that. Why worry students with the working out of endless problems to illustrate these laws when an elementary idea of the atom as the unit in chemical combination makes it abundantly clear that it is quite unnecessary to worry about experimental proofs.

There seems to be little correlation between the theoretical and practical courses. Much of the practical course involves repetition of experiments which ultimately become boring and in which a student may be able to acquit himself well in the eyes of an indifferent examiner even though his work gives no evidence of experimental skill. There are certain skills which must be taught, and if any effort is made to teach them, then they must be taught with the greatest care from the beginning. If the student is to have exercises in weighing, then let us see that he can weigh accurately and is thoroughly familiar with the use of a chemical balance. To this end, he might be given, for example, a stainless steel piece for weighing. Again, he might be given the weighing of an object which can suffer considerable change on account of varying climatic conditions, and thus be able to gain some information as to factors which can affect weight and thereby estimate the degree of accuracy which he can expect. It is simply ludicrous to hear senior students complain that they cannot weigh accurately without a balance capable of weighing to 0.0001 grams when the humidity, for example, may affect the weight in the third decimal place during the process of weighing.

Much of the determination of percentage loss in weight may be treated as exercises whereby the student may be able to demonstrate to his own satisfaction the information conveyed by the chemical equation. Having mastered the technique, the student may well leave a great deal of the detailed analysis to others who later specialize in Analytical Chemistry.

Again, the experiments should not be in the form of isolated units, but should form part of a general project which he follows through from stage to stage. This is something well within the competence of even a First Year student, and all encouragement should be given to the student to embark on small 'research projects' of his own. Even in the First Year class it has been observed that many of the brighter students, having completed their assignment, seek permission to undertake other work—sometimes experiments based on what they have read, and sometimes, applying their intuition, to discover whether certain predictable reactions actually do occur, and if not, to find the reason why. Here we have science as it should be—enthusiasm, insight, and research.

It is perfectly obvious, therefore, that in the First Year Science class at least, there is a clear case for the revision of the syllabus, certainly in Chemistry and probably in the other sciences also. Considering the age group with which we deal, there seems to be no alternative but to have a well-planned course in General Science. Further, such a course should be not only for Science students, but for Arts students as well. Many universities have done much towards solving this problem by introducing a Pre-University course where science will be compulsory for all.

A course in science for both Science and Arts students would have to be very carefully framed. Perhaps a course such as is envisaged for pupils in the sixth form in the U.K. and published in the Science and Education Report of the Association for Science Education might serve as a basis for further consideration. The Policy Statement asserts that 'Science should be recognized—and taught—as a major human activity which explores the realm of human experience, maps it· methodically but also imaginatively, and, by disciplined speculation, creates a coherent system of knowledge.' Here it is assumed that all pupils entering the university stage will have had science as a compulsory subject, and therefore, none will be newcomers to science. This course would be for all and not merely for Arts students. For the Science students, it is not the intention that this course should take the place of the regular science course in which there might require to be a certain amount of specialization.

There are certain difficulties to be overcome before such a course can be introduced. With regard to the Arts, the difficulties are of a more minor nature, since here we would not have the problem of having to provide for two parallel science courses. In the case of the Science students, however, the question arises as to how much specialization we are to have from the First Year stage. It may be argued that there is a place for specialization, particularly for those who are about to embark on a scientific career. But, with things as they are, it is practically impossible for any student at the beginning of his career to know definitely what he will ultimately become. Therefore, the possibility of any bifurcation at the First Year Science stage is virtually ruled out. If, therefore, we are to introduce a General Science course for Science students, a possible solution would be to have this sixth-form science course common for both Arts and Science, but in the case of Science students the course should be interwoven in a General Science course so that there will be one and only one science course in the First Year. Thus, although this proposed course might involve only two teaching periods per week supplemented by other activities involving some experimental work and projects, the science course for Science students would be considerably more extensive.

The general themes for this course are:

The Nature of Scientific Thought;
Cosmology;
Energy;
Matter;
Life;
Behaviour;

Environment;
Science and Society.

Although details are suggested, neither the details nor the order in which the topics are presented need be rigidly followed.

Our doctors and engineers are not likely to be specialists in pure science and for them the General Science course, such as suggested, would be of immense value.

An approach such as this is essential for First Year Science students, and one really wonders whether it would not be advisable to have such a course in General Science for the Inter Science students also, and postpone all specialization till the post-intermediate stage. This is perhaps somewhat revolutionary, and many would object on the grounds that the time remaining for specialization is too short. On the contrary, if we are to produce scientists, early specialization is what nullifies any effort to do so.

THE STATE AND HIGHER EDUCATION: SOME SUGGESTIONS

G. C. Pande

I

THAT THE STATE should support and encourage higher education is a well-accepted consequence of our idea of a welfare state, as also of the fact that with the abolition of Zamindari and the present tax-structure, private charity has almost dried up as a significant source for maintaining higher education is our country. The expansion of higher education in scale and quality also requires far greater resources than before and these cannot be secured except from the state.

It is also well known that the resources available to most of the Universities in the country fall far short of what would be required to modernize them and to raise their standards. From this point of view we could divide the Universities into three categories: (*a*) Central Universities, (*b*) Universities situated in the capital towns of the states, and (*c*) Regional Universities. From the financial standpoint we have here a descending series, the first being relatively well-provided, the last largely starved. It is obvious that the Central Government is better able to discharge its financial obligations towards its educational institutions than the state governments. While it is true that even the central Universities cannot compare in terms of their financial resources with the better Universities abroad, the condition of most of the state Universities, especially of the newer and largely regional Universities, is pitiable indeed.

If we admit that in higher education quality must not be sacrificed to mere quantity, and that quality in modern higher education cannot be secured without an increasingly high rate of expenditure which would enable institutional facilities to keep pace with growing knowledge, it is obvious that we must vastly increase the existing financial allocation for higher education and at the same time remove the obstacles which keep most of the Universities starved. As concrete measures, the following may be suggested: (1) *At least one University in each state may be taken over by the Central Government.* Although not a new suggestion now, it is a pity that it has met with so little practical appreciation so far. It is only residential and postgraduate centres of study which need to be considered in this context. (2) For other state Universities the U.G.C. should substantially reduce the requirement of securing matching grants. The U.G.C. could at the same time restrict its grants to certain categories and centres and refuse to help unnecessary duplication of facilities in the same state. Contrary to what appears to be the existing practice, grants for trained staff, books, and equipment ought to take precedence over grants for buildings and diverse extra-curricular activities. (3) The multiplication of regional Universities ought to be sharply restricted. When unavoidable, they ought to be in the first stage of an affiliating kind and should seek to develop postgraduate centres sparingly. Since irrelevant considerations of a political or personal nature very often enter into the creation of these Universities, seeking to restrict their numbers would in practice entail many difficulties. Sooner or later, however, the political leadership of the country has to realize that higher education is worse than useless if instead of advancing knowledge it only functions as an avenue of distributing patronage or funds. At present, very often the job-creating and propaganda aspects of the new Universities seem to attract the most attention from those who are politically important.

II

Apart from paying for higher education, the state is also responsible for giving Universities their statutory status. Through the statute, the government, Central or State, decides the pattern of the University and in effect makes a fateful choice about the most relevant and effective institutional set-up required for the promotion of higher education under given circumstances. The whole history of education shows that in education, as in industry, there is a natural tendency towards the concentration of location. Schools arise and traditions gather round eminent and gifted teachers and the brighter students flock there from long distances. The physical and financial difficulty of multiplying equally good libraries and laboratories matches the difficulty of deliberately and speedily creating an effective or impressive academic tradition and environment. It is thus no accident that the most famous Universities of ancient or modern times—Vikramasīla or Nālandā, Oxford or Harvard—have been residential in character. In India, on the other hand, it has been a standing drawback that modern

University education began under the affiliating, examining pattern. This was an inevitable consequence of the fact that the British educators of India were interested more in the *spread* of English education among the Indians than in the creation of advanced centres of learning which would be capable of furthering the frontiers of knowledge through active research. For a long time, except for Indology and Indian economics, there was hardly anything in which Indian academicians distinguished themselves as original researchers. Indian Universities of the nineteenth and early twentieth centuries could hardly be called institutions of higher education. It is not being contended that it was a barren period in the intellectual or cultural history of India. On the contrary. The great figures of the age worked on the larger canvass of life.

The emergence of residential University centres in Calcutta, Banaras, and Allahabad coincided curiously enough with the rise of a strong national sentiment. A genuine effort was made in these and similar Universities to promote research and higher standards of scholarship. On the whole it will have to be admitted that Universities of this pattern, i.e. wholly or predominantly residential, such as Allahabad or Delhi, still remain the best that we have in our country. On the other hand, purely affiliating Universities like Agra or Bihar seem to represent the other pole as far as academic standards are concerned. Affiliating Universities with a strong residential centre, such as Punjab or Rajasthan, form an intermediate group. *From this it follows that the task of promoting higher education in the country must involve upgrading the pattern beginning with the more promising cases.* A first step in this direction in the case of purely affiliating Universities may be illustrated by the effort of the Agra University to create Institutes of Hindi and Social Sciences at Agra. A more advanced step could be illustrated from the creation of the Gorakhpur University which has given an exclusive centre of postgraduate study to the eastern half of the Agra University. Unfortunately the experiment has been vitiated by the almost simultaneous assumption of undergraduate classes by the University. The pattern of growth evinced by the Rajasthan University plainly seeks for its fulfilment—the creation of a wholly residential University at Jaipur.

It is unnecessary to dogmatize about the exact pattern. It is only necessary to remember that a residential pattern tends to create greater concentration of resources, human as well as material, and promotes through a more intense contact of minds a more vital and creative intellectual atmosphere. Some current fallacies on the subject may be briefly answered. It has been stated, as for example by the ex-chairman of the U.G.C., that a residential University requiring two crores for its institution is too costly for India where we must be content with helping colleges to upgrade their standards. No one disputes the usefulness of colleges, especially for undergraduate teaching. Their limitation where advanced research is concerned is not unknown. Colleges will continue to function as the arteries of our educational system but they cannot become its heart and liver. *We have in fact to get away from the notion that higher education in India must simply be a dissemination of knowledge produced by research abroad.* The present collegiate system prevalent all over the country tends to perpetuate our intellectual backwardness. It must, therefore, be ameliorated by the creation of more intense and more advanced centres. The need is so obvious especially in the case of science, that the government has taken note of it by creating a series of research institutes and laboratories throughout the country. While in some cases commendable work has been done, genuine doubts have unfortunately been expressed over the actual working of many of these institutes and the results achieved by them. Without entering into details, it may be stated that these institutes generally suffer from their total disconnection from University teaching. The undergraduate college and the research institute are, in fact, two extremities of a single body from which they ought not to be detached. That body is the Teaching University which must remain the central organization. It is only in a University where scholars of different disciplines meet that the ground is prepared for the most revolutionary and far-reaching discoveries. If it is true in the long run for even the most technical sciences, it is the very essence of all thinking about Man, which cannot be too sharply cut up for ultra-specialized disciplines and institutes except by reducing these to the tedious and rather insignificant function of sharpening the keen tools of research and gathering empirical data. Such an attitude can be taken seriously only in societies like the American or Russian where it is believed that human nature has at last been understood infallibly and an ideal society achieved at last in outline. In India, one dare say, we are still happily debating fundamental questions about human nature and social institutions *pace* the Planning Commission with its dogmatic omniscience (except for mere matters of detail!). It would be a pity if such debating were to be stopped by imprisoning all advanced study and research into highly specialized institutes controlled by the government.

III

Autonomy is indeed a built-in feature of the residential pattern and in some ways the strongest argument for it. Since the Middle Ages in Europe, the Universities have been conceived as self-governing corporations. It is this that distinguishes the University from the College in the ultimate analysis. Students and teachers may be brought together in many ways but they do not always constitute a University in the true sense of the word. The rules and discipline of a University must ultimately be self-imposed and if there is any sphere of social life where freedom must be very transparently institutionalized, it is the University. The student must obey the teacher out of respect and trust rather than habit and fear, and the experience, wisdom, and good sense of the teachers must constitute the continuously rational bond of authority in a University. *There is no place in a University for any non-academic authority.* The universal purpose of administration in any institution is to help and serve its functioning, not to reduce the essential functionaries of the institution itself to subservience. This is a peculiarly irrational situation which is nevertheless to be found widely in our Universities where the non-academic officers and bodies tend to exercise a disproportionate degree of influence and power. In the growth of this unhealthy tendency state interference and legislation have played a major part. There has been a tendency to centralize authority in the Universities in the office of the Vice-Chancellor whose appointment has been increasingly taken over by the state. Directly and indirectly a variety of legislative measures by the state have tended to produce this consequence all over the country. The stock excuses for this attenuation of University autonomy are three—the need for exercising financial vigilance, the growth of student indiscipline, which is supposed to reveal the inadequacy of the older administrative set-up, and the growth of a class of teacher-politicians who would otherwise vitiate the atmosphere of the University. Of these, the first is plainly important. The State which finances the University is certainly entitled to see that the funds it provides are not spent wrongly. This should not, however, become an excuse for constant meddling. It only requires the creation of an adequate procedure and rules of financial management and yet this rational requirement has been flagrantly abused in more than one case. For example, the government of U.P. neglected most of the constructive suggestions of the Mootham Enquiry Committee but promptly proceeded to invest the Honorary Treasurers and Accounts Officers in the University with such power as to create a virtual dyarchy with all its attendant evils! As a practical measure it may be suggested that parallel to the Registrar, a Finance Officer may be appointed on deputation from the Central Service for audit and accounts. This would ensure that University finances are looked after by an officer at once independent and competent.

As for the question of student indiscipline, while the problem is serious, its solution does not require any curbing of University autonomy. Having intensively investigated many occurrences of such indiscipline, the present writer is convinced that the usual causes are (*a*) a few unruly students who are professional agitators, (*b*) support and sympathy of some political parties, and (c) weak handling by University administration under the apprehension that an alternative procedure may not ultimately be blessed by the State Government. It is obvious, then, that if the government is prepared to support University authorities in dealing firmly with indiscipline despite the protests of irresponsible opposition parties, indiscipline would be cured. The government should back and support University administration, not to put its own men on it.

As for the teacher politician, the phrase is dangerously vague. It covers the politically wide awake teacher who ought to be welcome as also the professional intriguer who should never have been selected and appointed. *No obvious solution can be discovered for a disease which today permeates our entire body politic.* Democracy has come to mean in our country a system under which professional intriguing has come to acquire a marked premium in almost all walks of life. Governmental control is worse than useless, for the politicians who rule the country are not likely to be more honest in relation to the Universities than they are elsewhere. Our only hope lies in the gradual improvement of professional standards which should become so exacting as to exclude the incompetent from entry or promotion. This situation, however, can only be achieved gradually as the Universities come to perform their real function—the advancement of knowledge—more and more.

In conclusion, it may be stated that in relation to higher education, the Government has to make more adequate financial provision and for this the central government must take on a greater burden directly than is done now and the state government must abandon a purely quantitative approach to the expansion of higher education. Besides, the Governments—Central as well as State—ought to seek through adequate legislation a rational pattern for the organization of higher education, and they could not do better than to create an adequate number of residential Universities in the country by modifying at first the existing statutes suitably and gradually. Finally, the Government must be the guardian of University autonomy, and not seek to whittle it away for diverse transient and illusory reasons.

(Continued from front flap)

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